IRON AGE
METALS PRODUCER

CK014CONGRES----00
0 JUN88
CONGRESSIONAL INFO SERV SCF
SHI ACQUISITIONS
4520 EAST WEST HWY S 800
BETHESDA MD 20814

CASTING THIN STRIP

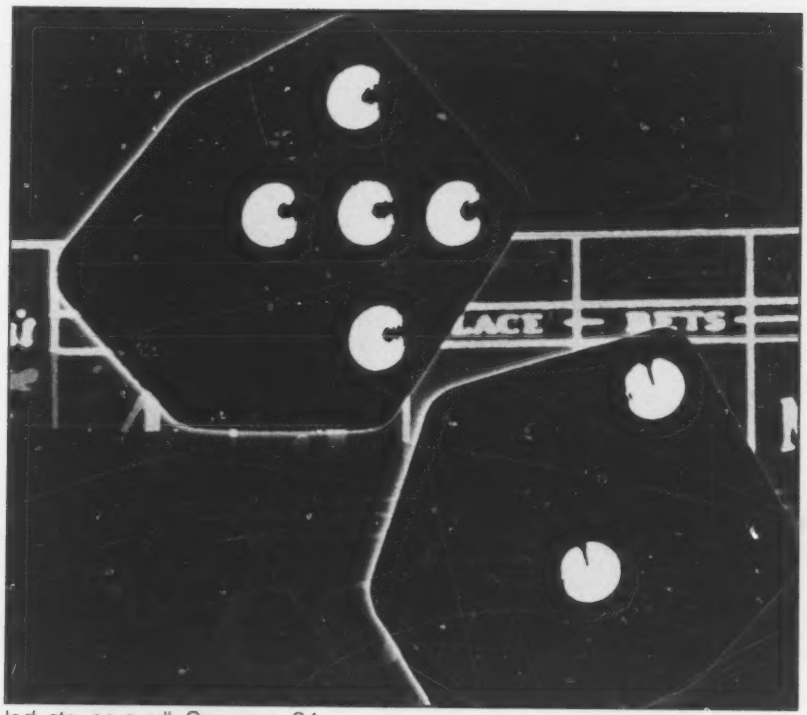
WHERE RESEARCH IN STEEL IS HEADED

Plus

SECOND QUARTER FORECAST— INDUSTRY ON A ROLL

APRIL 2, 1984 VOL. 227, NO. 7

IRON AGE METALS PRODUCER



Industry on a roll. See page 24.

Editorial 5
Something happened, now, what happens?

Newswatch 13
Justice Dept. approves LTV/Republic merger.

The Hot Spot 22
Hi-Tech without basic industry.

Second Quarter Forecast 24
Current recovery shows it has a life of its own.

Casting thin strip 52
A new approach in steel R&D.

Joint Research 60
What about limited research partnerships?

Materials Report 71
Inventories contribute to the steel recovery.

Price Trends 84
Producer prices rose moderately in February.

Next issue: Seamless tube technology.

Departments

EDITORIAL STAFF	6
SIGNED, SEALED AND DELIVERED	8
INDUSTRIAL BRIEFS	21
PRODUCT & EQUIPMENT REVIEW	64
AD INDEX	74
MANAGEMENT SERVICE CARD	75
BUSINESS STAFF	76
P&P DATA 3/26	77
FERROUS SCRAP	78
STEEL PRICES	80
STEEL PRICES	81

IRON AGE (ISSN 0164-5137) is published 24 times a year by CHILTON COMPANY, Chilton Way, Radnor, PA 19089. Chilton Co is a division of American Broadcasting Companies, Inc., New York, N.Y. Second Class Postage Paid at Wayne, PA 19087 and additional mailing offices. IRON AGE is sent on a controlled free basis to qualified managers in U.S. metalworking companies. Non-metalworking companies, services, government, institutions, schools and colleges, $42 one year. Canada, $42 year. Foreign, $49 one year. Single copies, $2.50. Cable Chilton Philadelphia.
Send address changes to IRON AGE, P.O. Box 1440, Riverton, N.J. 08077.

ONE OF THE ABC PUBLISHING COMPANIES

Chilton abc

BY JOHN D. BAXTER

INDUSTRY ON A

The current business recovery is showing it has a life of its own.

It is rolling along quite strongly in the face of high interest rates, an overvalued dollar, an erratic money supply and a monstrous and menacing Federal budget deficit.

This recovery has made fools of fretting Cassandras and heroes of a number of howling optimists.

At this point in time, a reasonable outlook is for strong economic growth this year to the tune of a 5 to 6 pct increase in real Gross National Product.

One bank economist who recently tore up an earlier low-figure forecast for 1984, said, "This may turn out to be a normal recovery after all."

If this, until-now maligned recovery, does turn out to be a normal one, it will run for about 45 months. That is the average duration for post-war recoveries. So, if the current business expansion runs a somewhat 'normal' course, it would be hanging around another 28 months. That would mean good days through to the third quarter of 1986.

The staying power of the recovery is of special interest to those companies in metalworking that produce capital equipment—and to their vendor companies. Outlays for capital equipment take a long time to catch up with economic recoveries. A short recovery period can be crippling to plant spending; a long one pretty well assures that big-tag spending will reach full bloom.

Capital spending, carried forward by the force of 17 months of economic recovery, is showing signs of coming to life in a big way.

One clear sign of this 'coming to life,' is seen in the latest U.S. Commerce Department quarterly survey of business executives on their plant spending intentions for this year.

The survey, which was taken in January and February, found that the executives planned to boost their spending by 13.6 pct over last year. After applying a Commerce Dept. estimate for an expected rise of 1.4 pct in prices of capital goods, spending would be up 12 pct.

It was durable goods producers who posted the brightest numbers on the forecast board for this year. They forecast an expenditures increase of better than 21 pct for the year over 1983.

If that wasn't good news enough, just 48 hours later, the Conference Board released good tidings in their latest quarterly survey of the 1,000 largest manufacturers on their fourth quarter 1983 capital appropriations.

In that closing quarter, manufacturers increased their setasides by 20.4 pct over the previous quarter. That was the biggest one-quarter jump since 1976. This increase excludes appropriations made by the petroleum industry.

What it adds up to is that plant spending, so critical to metals producing and metalworking is finally catching up with the overall recovery.

Inflation Worry

Fears of an overheated economy bringing back inflation are sounded mostly by those who forget how far down the economy had sunk. In the roughly three-year time period from January 1980 to November 1982, the U.S. economy was hit by 22 months of recession. There is no precedent in U.S. economic history for that much business contraction over a similar span of time.

At this point in the recovery, capital investment is the critical element.

But, along with the recent good signs and rosy surveys on capital investment, there have come warnings.

The Conference Board release pointing to strong fourth quarter appropriations, in a closing paragraph noted, "Interest rates remain high. If they should edge higher in the presence of government activity in credit markets to accommodate large Federal budget deficits the anticipated capital spending increases may not materialize."

So far, companies have been largely tapping internal funds to finance their capital outlays and this may not be enough to give these outalys real push and staying power. Long-term corporate borrowing has always in the past played a major role in expansions of plant investment.

Credit Confrontation

If corporate cash flow—retained earnings and depreciation can—remain strong, a credit market confrontation with the government can be averted. Or, at least, any confrontation could be minimized.

Averting a full head-on clash is important. After all, the government is already gobbling up more than 50 pct of all available credit. While moderate incremental gains in interest rates might not be enough to snuff out a capital investment recovery, a full-fledged credit crunch could likely do the job all too easily and quickly.

It now looks like the strength of the recovery will sustain corporate profits and cash flow and assure an adequate supply of funds to sustain capital spending at high levels.

So, some 10,000 executives told the Commerce Dept. they will be sharply stepping up their spending for plant and equipment this year.

And the 1,000 largest manufacturers told the Conference Board they made the biggest quarterly increase since 1976 in capital appropriations.

This makes the outlook downright rosy for U.S. capital goods producers and all those metals producing and metalworking companies that supply those producers.

The published surveys on all this big upcoming spending don't say **where** and for **what** the big spending will be directed.

Questions Asked

How much of the spending will go for foreign-made machinery, equip-

ROLL

ment and accessories?

How much of the spending will go for computers, office automation equipment and other 'information technology' capital goods rather than basic industries' capital goods?

Those 'whats' and 'wheres' of capital spending this year will have a great deal to do with just how much basic metalworking industries share in the anticipated 1984 investment spree.

Certainly, at this time, many machine tool builders remain cheerless in the midst of burgeoning domestic markets for their equipment. They see 36 pct of that market being grabbed off by imported tools.

The hope this year is that recovering world markets will lessen the intensity of penetration into domestic markets by offshore competitors. That seems likely to be the case.

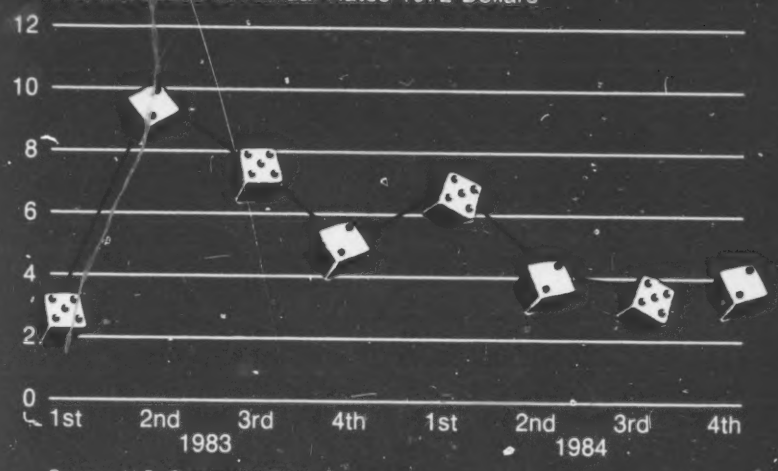
Just as certain as in imports, there has been a marked trend in recent years away from basic industries' capital goods market growth towards the capital goods of 'information technology' industries.

A strong trend running well prior to the current recovery shows a new 'mix' in capital investment has occurred in U.S. industry. For example, in the late 1960's, outlays for basic industry capital equipment and facilities accounted for about 30 pct of total U.S. business fixed investment. By 1982, that share was down to 18 pct.

Still, in current capital investment, and in plans for further investment this year, the basic goods industries are holding their own very well. According to the Commerce Dept. survey, executives in such basic industries as autos and primary metals are calling for the biggest increases in plant spending outlays this year.

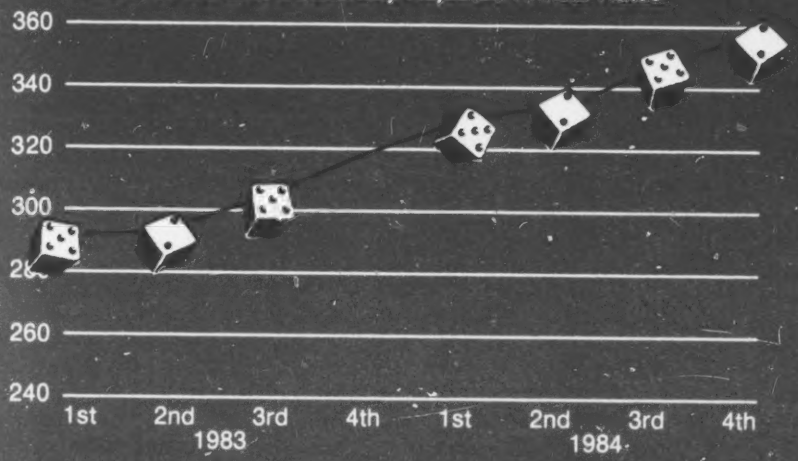
On balance, it looks like the 'pros' on capital spending and U.S. metalworking industry, recovery outweigh the 'cons' for 1984. □

GNP
Pct Increases at Annual Rates 1972 Dollars



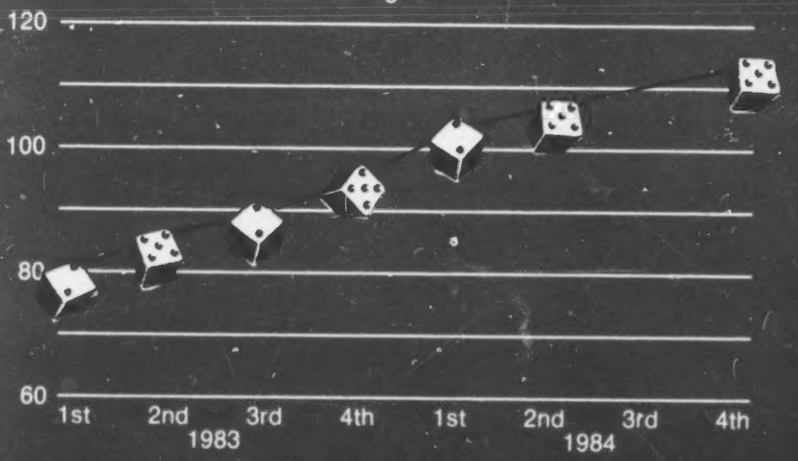
Source: U.S. Commerce Dept.

Plant Spending
Billions of Dollars, Seasonally Adjusted Annual Rates



Source: U.S. Commerce Dept.

New Orders, Durable Goods
Billions of Dollars, Mo. Averages

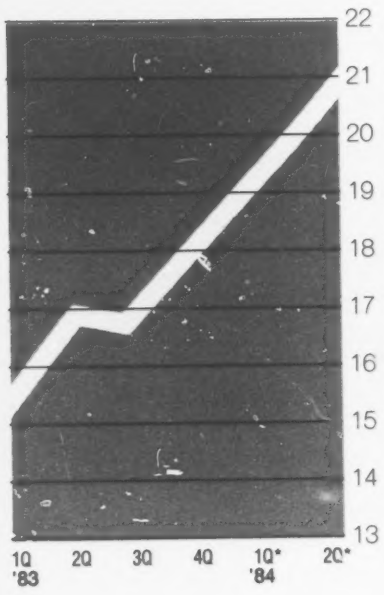


Source: U.S. Commerce Dept.

STEEL

Just on the basis of seasonal effects, shipments should rise to 21 million tons in the second quarter.

Steel Shipments
Millions of Tons



Source: AISI *IA estimate

The steel industry is on the brink of a strong market. Demand is moving up in nearly all product lines. It would not take much of an added nudge upward to tighten supply and create a snowball effect in the market.

There is no guarantee this nudge will be provided. The steel recovery is still extremely vulnerable to any easing in the big consumer industries—automotive, housing, and appliances.

These industries are sensitive to interest rates and steel executives wince when they hear talk from Washington that it's time to slow things down.

The capital goods sector is reviving, but it will probably be another six to eight months before heavy industrial activity moves into high gear. If the consumer recovery is aborted before then, the steel market will fall flat.

On the other hand, a normal economic pattern should bring prosperity to steel companies soon. There was a sharp rise in orders for bars in the first quarter. Demand for carbon and stainless sheet remained strong. Tool steel had a decisive improvement.

Most other products are moving up slowly from depressed levels. There has been a modest rise in orders for plate. Demand for oil country seamless pipe continues to rise. Some important linepipe activity is developing and demand for welded pipe has improved. The stainless bar business is better but still not good.

The various product trends added up to shipments of about 19 million tons in the first quarter. That was up from 18 million tons in the fourth quarter of 1983 and from 15 million tons in the first quarter of 1983.

Just on the basis of seasonal effects, shipments should rise to 21 million tons in the second quarter. With any kind of boost in the economy, shipments should go higher.

On paper, the mills have plenty of capacity to meet any likely demand. Raw steel output was under 80 pct of reduced capacity in mid-March.

However, demand is not evenly distributed. Sheet mills were unable to keep up with orders in the first quarter. Winter weather caused some loss of production. Deferred maintenance projects started cropping up.

In addition, there are bottlenecks. Sheet mills have plenty of rolling capacity, but they are short of slabs at some locations and are squeezed for annealing and galvanizing capacity at others.

Because of cutbacks and layoffs, the industry will probably run into more production snags if demand surges. There could be a quick switch from a buyer's to a seller's market.

That hasn't happened yet. Price cutting has continued in all product lines, including sheet. Despite better volume, the price situation resulted in considerable red ink in the first quarter.

Domestic producers trace their price problems partly to the influx of foreign steel. Over 2 million tons were imported in January. The foreign volume keeps steel users from getting excited about possible domestic shortages.

The import situation also enters into the restructuring efforts of the industry. In their merger proposals, steel men argue that foreign competition should be considered in considering the effects of domestic concentration.

This argument is seconded by people like Commerce Secretary Malcolm Baldrige, who want to permit mergers but minimize the curbs on imports.

On the other side, the antitrust people contend that domestic steel companies are already protected from foreign competition and are seeking to lessen domestic competition through mergers.

So far, the net effect of the compartmented government approach has been to block steel mergers and also deny effective protection against imports. Despite formal and informal trade agreements, steel imports could rise from 17 million tons in 1983 to over 19 million tons in 1984.

NONFERROUS

The tempo began to quicken in nonferrous metal markets as the first quarter drew to a close and the benefits of the business recovery began showing signs of spreading from aluminum and zinc to copper and lead.

Most of the strength continued to come from the consumer sector, particularly automobiles. The nickel, molybdenum and copper producers were still watching the horizons for signs of a real pickup in the capital goods sector.

With U.S. car production in the first quarter running about 500,000 units higher than the same 1983 period—roughly 43 pct—a lot more nonferrous metals were being chewed up. The gain was worth about 33,000 tons to the aluminum producers and it meant more consumption of copper, zinc and lead.

Toward mid-March, copper showed new signs of springing to life, even without the still-anticipated but perhaps delayed pickup in capital goods activity. The cathode price pushed through the 70¢ a lb barrier and headed toward 75¢ a lb, which is where it was in mid-September before the last recovery attempt fizzled out. As things turned out, September was close to the start of a surge in hedge market copper inventories that carried straight through the balance of 1983. After January, however, Comex and London Metal Exchange stocks declined nearly 125,000 tons, or about 14 pct, as the latest price surge began picking up steam.

Earlier in the quarter, the U.S. producers launched another bid for import quota protection. (Former President Jimmy Carter "pocket vetoed" a favorable recommendation from the U.S. International Trade Commission the last time around.) That now requires another review by the ITC over a six-month period, which likely will be seeing an improved trend in copper prices and consumption. What the U.S. copper companies are after is insurance that they will be able to recover market share in the home market, but at better prices than were available last year.

Over on the aluminum side of the business, the downtrend in inventories was beginning to slow up rounding the bend into 1984, reflecting steadily increasing production beginning in the second half of 1983. There was some faltering in free market ingot prices toward mid-March, followed by signs of slower recovery.

U.S. producers are projecting a 9 to 10 pct gain in deliveries this year, which would put the industry back on the record-breaking track, shipment-wise. Price recovery started to spill over from ingot to mill products, but slowly because of competitive factors.

The transportation sector is expected to provide the aluminum producers with the biggest part of their anticipated gain in shipments this year, tonnage-wise and percentage-wise. Forecasts, backed by the surge in car and truck production, call for a jump of about 500,000 tons, or over 20 pct. Shipments to the container and packaging sector are seen rising about 4.5 pct.

Increased car production is helping zinc consumption and prices, but a tightening supply situation is given most of the credit for the first quarter price gains. U.S. refiners' stocks have been under a one-month supply since last July and the industry doesn't look for any significant increase in U.S. output until next month when an idle smelter starts coming back onstream.

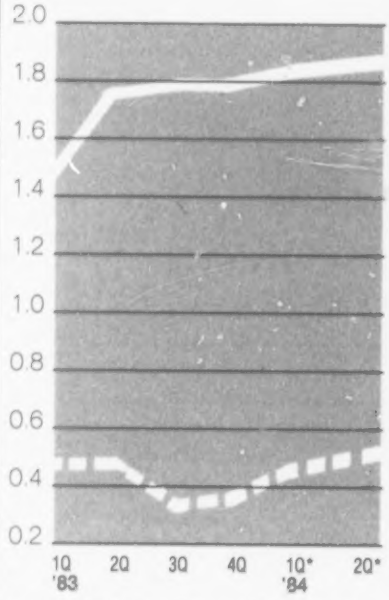
Overseas markets also have been firming up and special high grade zinc supplies were said to be tightening to a point where further price increases were possible before midyear.

Lead prices improved modestly in the first quarter, due largely to the impact of severe weather on replacement storage batteries. Refiners' stocks are well below year-ago levels and far from burdensome, but they were tracking upward as 1984 began. Better grades were moving into a tight supply situation as the first quarter drew to a close.

U.S. (aluminum) producers are projecting a 9 to 10 pct gain in deliveries this year. . . .

Nonferrous Metals Shipments

Millions of Short Tons



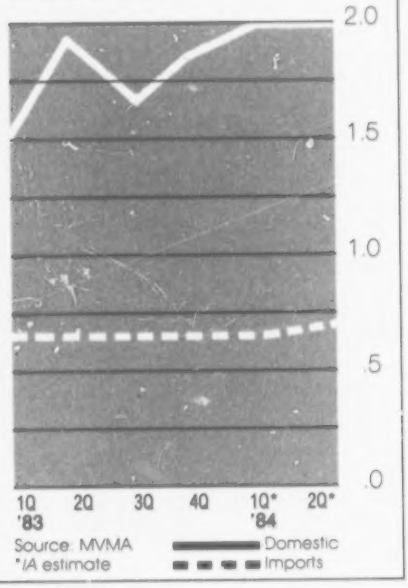
Source: American Bureau of Metal Statistics, Aluminum Assn
*/A estimate

Aluminum
Copper

AUTOMOTIVE

'The odds for the present upturn in auto sales continue to look promising.'

Automotive, Sales
Millions of Units



U.S. automakers probably will sell as many passenger cars in the second quarter as they did in the first quarter: about 2 million.

After building 2.2 million cars in the first quarter, Detroit likely will produce between 2 million and 2.1 million automobiles in the second quarter.

Detroit has not sold or built 2 million cars in a single quarter since 1979. Auto production in the first quarter of this year exceeded the first quarter of 1983 by almost 46 pct. Sales in the first quarter of this year were about 35 pct higher than last year.

"The economy today is on a roll," the president of one Big 3 automaker said recently. "The odds for the present upturn in auto sales continue to look promising."

Current dealer orders at GM are the highest in that company's history.

Sales in the second quarter won't exceed last year's second quarter by those 35-pct margins.

"Clearly, our sales can't continue to be so much higher than year-earlier sales," said the auto executive.

February marked the twelfth consecutive month in which the industry's sales surpassed the level reached in the same month one year earlier.

"Second-quarter sales will be about 14 pct higher than last year's," said an auto analyst for one car company.

Another analyst predicted that the seasonally adjusted annualized rate (SAAR) will fall from 8.15 million domestic sales in the first quarter to 7.75 million in the second quarter. Since he figures that the second quarter accounts for 27 pct of annual sales and the first quarter 26 pct, the analyst predicts that actual sales in the second quarter will slightly exceed those in the first.

"The first quarter was too exuberant," said the analyst. Auto sales in that period rose above his trend line because sales in October and November 1983 fell below it.

"But we haven't seen sales pushing into such high pinnacles that low bottoms are certain to follow," he added.

Most auto plants are working at full capacity and overtime. The market is absorbing most of the small cars produced and could absorb even more large cars. Dealer inventories fell from a 60-day supply at the end of February to a 56-day supply a month later.

"Customer confidence and disposable income are as high as they can get," said one analyst.

One automaker's forecasters expect both the prime interest rate and vehicle financing rates to remain about constant through 1984.

"The prime could rise by one-quarter or half a point," said one forecaster, "each quarter this year. From today's 11-point prime, we could reach 12 points by year-end."

"Some economists," noted one automotive president, "say that high interest rates in the fourth quarter will spoil the recovery. But they're the same ones who mistakenly said that car sales in 1983 would be poor."

Automakers generally expect sales and production to continue until the middle of 1985 at the same rate as in the first half of 1984. They foresee a slowdown in the second half of 1985 and a downturn in 1986.

One big reason for their confidence is the average age of the vehicle on the road today: seven years.

Under the "voluntary restraints," Japanese automakers will increase the number of vehicles shipped to the U.S. between April 1, 1984, and March 31, 1985: They'll land 1.85 million passenger cars and 91,000 multi-purpose vehicles, such as Subaru Brats and Toyota station wagons. In the year ending March 31, 1984, the Japanese exported 1.68 million passenger cars and 82,500 multi-purpose vehicles to the U.S. The rise in Japanese imports will push quarterly sales of imports to the 700,000 mark for the first time.

MACHINE TOOLS, FLUID POWER

MACHINE TOOLS—Machine tool makers remain an unhappy lot. While other industries have returned to the good old days, machinery makers are still waiting for the end of the worst recession in decades.

Business is up, in some lines by as much as 13 pct over late 1983 figures, and the expectations for the rest of 1984 are for continuing increases. The problem is it will take, at present rates, many quarters of such increases to return to the "good old days."

So far, this consumer-led recession has not nudged capital goods customers much, machine tool companies report. The long-awaited surge in the capital goods markets is still awaited.

"It will remain slow for us as long as perceptions, and realities, about interest rates remain high," said one industry leader. "Our business is based upon customers long-term confidence about production. A system, even a stand-alone machine today is a very, very expensive proposal. They aren't bought without beliefs in rather long-term use," he adds.

So, over the machine tool industry is one major cloud. Is the recovery real, or is it a consumer binge only?

Other clouds continue to float in from Asia. Already, Japan and a few other Pacific Basin countries have upwards of 50 pct of some segments of the U.S. market. That kind of import penetration has some U.S. builders wondering about the future of the U.S. machine tool industry.

Still, the first quarter as well as the second are expected to be up by 12 or 13 pct over 1983's corresponding quarters. The mystery is the rest of 1984.

However, long-term and worldwide, machine tool makers probably are more optimistic than ever. The systems that can now be built are so productive that they must be built in terms of competitiveness. The question is not a matter of technology, but whose and where?

FLUID POWER—The fluid power market is continuing an uptrend that began in the second quarter of 1983 and has been gaining ever since.

From a turning point in May 1983, fluid power orders had climbed 43 pct over the year-ago period by last July and were continuing to rise.

First reports for 1984 showed the improvement over the year-ago period was beginning, finally, to moderate a little. But the first quarter of 1984 should be up at least 16 pct over the last quarter of 1983. The second quarter is good for another 10 pct increase.

Earlier, *Iron Age* pointed out that by year-end the cumulative gains for 1984 should amount to at least 20 pct over 1983 and near the $5 billion sales mark. The industry peak in 1980 and 1981 was more than $6 billion.

Hydraulic systems, the industry's biggest product area, have been strong since last June, though December sent a cold chill through some quarters. Orders for hydraulic equipment dropped more than seasonally below November. That was the dark side, but the bright side was that hydraulic was scoring remarkable order gains over the year-ago period, which would surprise a lot of general economists when they began looking at the gains in industrial orders in the fourth quarter.

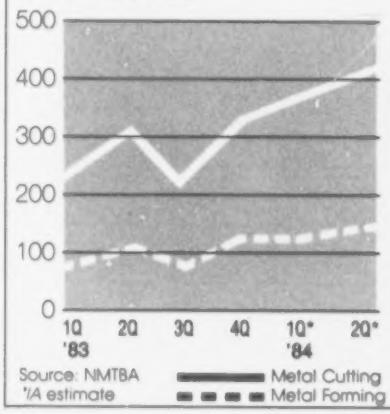
The recovery has been strong enough and sharp enough to make deliveries a problem in some fluid power plants. That may check some gains in the first and second quarters.

Pneumatic fluid power showed less year-to-year gains in the closing months of 1983, only because it hadn't dropped off as much as hydraulic power. It has been gaining over the year ago period and continued to do so even during the December order glitch. In the first months of 1984, pneumatic orders appear to have hit their highest rate in the past four years.

For fluid power in general, a strong first half is well under way.

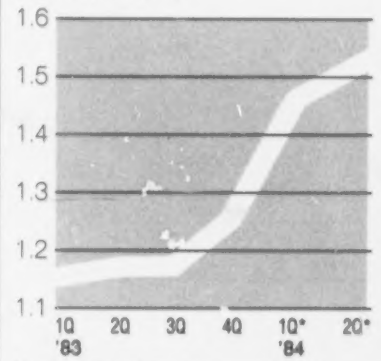
. . . over the machine tool industry is one major cloud: Is the recovery real or is it a consumer binge only?

Machine Tools, Net New Orders
Millions of Dollars



Source: NMTBA
*/A estimate

Fluid Power, Shipments
Billions of Dollars

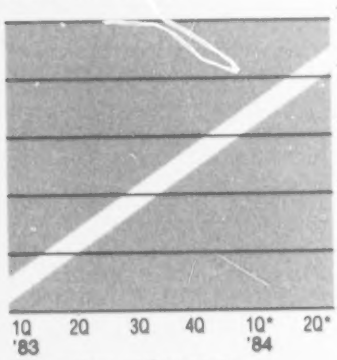


Source: Dept. of Commerce and NFPA
*/A estimate

COMPUTERS, INSTRUMENTS & CONTROLS

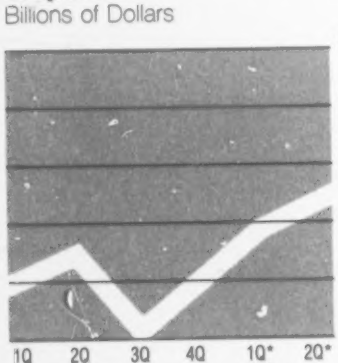
The personal computer and small computing systems spearhead growth. . . .

Computers, Shipments
Billions of Dollars



Source: Dept. of Commerce
*IA estimate

Instruments & Controls, Shipments
Billions of Dollars



Source: Dept. of Commerce
*IA estimate

COMPUTERS—By industry standards, 1983 was an off year. But based on first quarter 1984 sales, the computer industry is again on the fast track.

First quarter shipments are up from the year earlier period and second quarter figures should be even stronger as the U.S. continues to work its way clear of the recession. The second half of the year will be stronger as more orders come in from a recovering European marketplace.

The personal computer and small computing systems continue to spearhead industry growth for the first half of 1984. These low-cost systems have been snapped up in recent months, especially by the smaller businessman, who is making a determined effort to join the computer age.

The strong growth of the superminicomputers is expected to continue. High-powered microcomputers or "supermicros" are assuming tasks once reserved for larger computers.

The computer-aided design/computer-aided manufacturing (CAD/CAM) market is continuing its rapid expansion through 1984. Reportedly, the market is growing at a rate of 38 pct a year. A major effort in 1984 by U.S. management to improve manufacturing operations will mean increased purchases of computers for CAD/CAM and other automated manufacturing operations.

The ongoing deregulation of the telecommunications industry will be changing the shape of the computer industry in the months ahead. Several computer manufacturers are broadening their product lines in order to compete successfully as these markets merge.

Not everything in this year will be sunshine for computer sales. Export markets continue to shrivel up, while foreign computers and computer parts gain larger shares of the U.S. market. A lingering recession overseas plus the sustained strength of the U.S. dollar has halted export growth.

INSTRUMENTS & CONTROLS—Instrument and control sales improved slightly in the first quarter of 1984. The second quarter should be better.

Product shipments dropped 4 pct in constant dollars in 1983. This year should show a 1 pct or 2 pct improvement. Higher levels of capital spending usually signal increased purchasing of instruments for measurement, analysis, and control. Forecasters see major increases in capital spending throughout 1984. Capital expenditures, which dropped from $55 billion in 1982 to $52 billion in 1983, are forecast to reach $60 billion in 1984.

How much of this spending will be done by the primary metals industries and other major buyers of controls is difficult to determine. The last quarter of 1983 and the early months of 1984 saw little increase in capital spending by basic metals producers.

Exports, which account for more than one-quarter of instrument industry's sales, are an important part of the profit picture. However, exports over the past two years have been down. In 1983, exports dropped 2 pct to $4.7 billion. A slow recovery by Europe and a dollar that gets progressively stronger are the two major stumbling blocks to higher sales. Also, Third World countries, such as the Arab nations which use a lot of controls for oil production, continue to experience hard times.

The scientific instrument market reportedly will grow by 1 pct in 1984. Aircraft instruments will see little demand, although defense-related products should pick up during the next several months. The pickup of laboratory and scientific instrument sales should keep pace with the rest of the economy.

Measuring and controlling instrument shipments will improve 1 pct in 1984. Major markets such as basic chemicals, metals industries, electric utilities, municipal sanitation works, and petroleum refining show little signs of improving.

INDUSTRIAL COATINGS, PLASTICS

COATINGS—Shipments of industrial coatings likely will rise from 84 million to 90 million gal from the first to the second quarter of this year. That's because of the continued health of the diverse industries that apply coatings to their products: appliances, automobiles, containers and buildings.

"We're on the brink of a big upturn in the industrial-maintenance market," said the vice president of one large East Coast supplier of coatings. "In both downturns and upturns, industrial maintenance lags the economy by about a year.

"When the downturn starts, industrial managers continue to do routine maintenance. A year into the downturn, they chop their budget for maintenance. A year into an upturn, they order more coatings.

Auto production will drop from 2.2 million to 2.1 million or 2 million units from the first to the second quarter. That will mean a slight dip in shipments to the automakers.

The coil coating industry should grow faster than the economy in the second quarter. It grew by almost 20 pct in 1983. One analyst expects shipments of both precoated aluminum and steel to increase by double-digit percentages in 1984.

"Coil-coated metals for cars and buildings," said the analyst, "will grow faster than the economy because those markets were depressed much earlier."

One market for coil coatings that should register big growth in 1984 is appliances. Finishing metal appliances is a production bottleneck with major costs. Many appliance makers are doing major retooling, so now's the time they're most likely to cut the finishing costs by ordering precoated metals.

Shipments of coated aluminum coil to the building and container industries should rise, but not at the rate of the economy, said the analyst. These are the two biggest markets for coil-coated aluminum.

PLASTICS—Last year was a banner year for plastics and 1984 probably will see even further improvement.

The first quarter sales and captive use of plastic resins posted a 200-million-lb increase over the fourth quarter 1983. That translates to a 7 pct increase in volume. The second quarter is expected to move up similarly.

Both engineering plastics and reinforced plastics (including composites) are selling at faster rates than others in this huge family of materials.

At the recent Reinforced Plastics/Composites Expo '84, an industry spokesman said that the industry is looking to top the 2-billion-lb "good old days" of 1978 and 1979.

The forecast for reinforced plastics is 2.155 billion lbs in 1984. The record is 2.046 billion lbs in 1979.

To no one's surprise, reinforced plastics continue to be extremely competitive both with steel and aluminum. These materials have come off a 475-million-lb fourth quarter and are completing a 510-million-lb first quarter 1984. The industry is looking for another jump—perhaps up to 525 million lbs—in the second quarter 1984.

The largest single market for reinforced plastics is automotive body panels. Only time will tell when some of the newer applications for RP materials in the automotive industry will catch on.

Perhaps, this year. If they do, steel and aluminum will lose out. Industry pundits look for a healthy 18 pct increase for reinforced plastics this year in automotive.

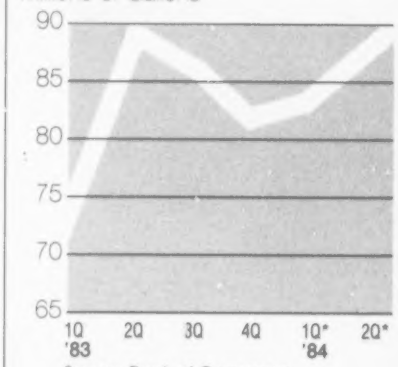
A variety of new applications will open up this year in the improving construction industry. Everything from doors to gutters are targets.

The tremendous growth in the use of RP pipe is slowing down, but it's still moving ahead at a rate of 12 pct. In the marine industry, analysts look for reinforced plastics to regain some of the business lost to aluminum, thanks to the development of a new resin.

Coil coating should grow faster than the economy in the second quarter.

Industrial Coatings, Shipments

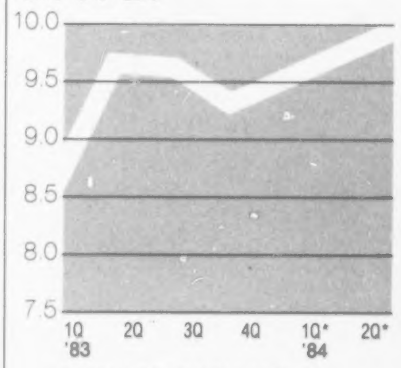
Millions of Gallons



Source: Dept. of Commerce
*IA estimate

Plastic Resins, Sales & Captive Use

Billions of Lbs

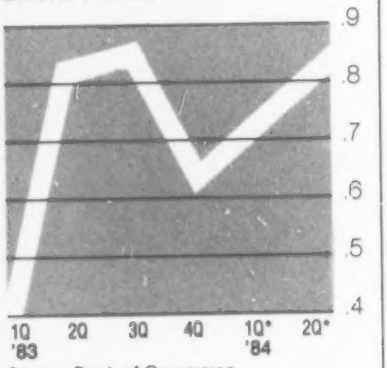


Source: SPI Committee on Resin Statistics, compiled by Ernst & Whinney
*IA estimate

CONSTRUCTION, FARM EQUIPMENT

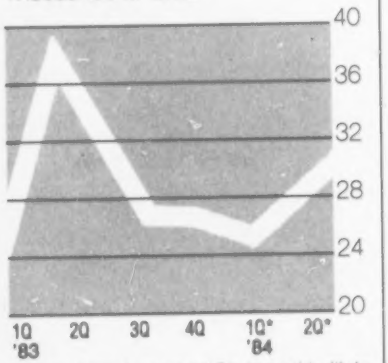
The first sign of recovery was visible in the highway equipment market. That spread to lighter equipment lines....

Construction Equipment, Shipments
Billions of Dollars



Source: Dept. of Commerce
*IA estimate

Farm Equipment, Wheeled Tractor Sales
Thousands of Units



Source: Farm & Industrial Equipment Institute
*IA estimate

CONSTRUCTION EQUIPMENT—The builders of construction machinery were beginning to feel better about 1984 even before the selling season begins.

For the second quarter, some industry sources suggest, equipment shipments will be up 20 pct over the first quarter level. There's still argument over that figure, but little or no dispute that the industry will be on the upswing.

Distributor sales, which will be the key to 1984 machinery manufacturing schedules, posted gains during much of 1983. That has cleaned out excess field inventory, though some machinery builders argue there is still too much finished equipment out in the distributor-dealer yards. But since 1982, dealers have been buying less equipment than they were selling.

The first sign of recovery was visible in the highway equipment market. That spread to lighter equipment lines as housing starts improved during 1983 and into 1984.

Caterpillar Tractor, the industry's biggest member, is continuing its recall of 3,200 employees at nine manufacturing plants, an indication that the market now looks solid enough to permit some production increases.

The Caterpillar recall actually began at the end of the fourth quarter of 1983 and will continue through the end of April. Other equipment builders are also calling back some employees.

In part, this is due to the permanent closing of some construction machinery plants during 1983. There isn't as much capacity as in the boom 1980 period. But it also means that builders are watching the decline in field inventories and feel it's time to make a manufacturing move.

Earlier, *Iron Age* forecast a 14 pct gain in construction machinery shipments this year. If the seasonal slowdown in the second half of 1984 is less than usual, that increase might surpass the projected 14 pct level for the year—closer to a 20 pct gain.

FARM EQUIPMENT—Last year, the farm machine builders were laboring to clear a glut of tractors in dealer-distributor inventories. Manufacturing levels never represented the actual level of retail sales during that period.

Normally, tractor sales in February tend to drop below January, often by as much as 25 pct. This past February, they actually rose 2 pct, or well over the historic seasonal pattern.

The current *Iron Age* outlook foresees a rise of more than 20 pct in the second quarter over first quarter tractor sales. The first quarter may be well over the current sales forecast of about 24,000 wheeled tractors at retail.

In the first two months, if the early tractor sales data holds, retail sales were up 16.6 pct over the year ago period, even though wheeled tractors in the 100 hp to 140 hp are lagging badly behind their 1983 pace.

Another big ticket item is still having trouble: Combines in the first months of 1984 were running far under the year ago period and making one of the poorest showings of any single equipment line. Harvest equipment is a seasonal market and doesn't begin to sell until later in the second quarter.

By contrast, a few short-line items, like planters, reportedly are in short supply for the spring selling season.

Short-line farm machine manufacturers, who build just a few products and often market part of their output to the big full-line farm machine companies for resale, did relatively better even in 1983. Their forage and tillage equipment sales were in the first wave of the farm equipment recovery, well ahead of tractors, the industry's bellwether product.

The original forecast of a 15 pct gain for farm equipment in 1984 may prove low in the unexpected early January strength. The rebound has surprised some farm machine builders. They were raising schedules in some product lines, but may have to think bigger.

OIL COUNTRY, MINING EQUIPMENT

OIL COUNTRY—A small but continued upturn in shipments of oil country tubular goods should continue through the first half of 1984. Industry officials are taking heart at statistics that show inventories declining some 20 pct in the last half of 1983. Many believe if drillers and distributors don't move to replace dwindling stocks soon, supplies could tighten up by the end of the second quarter.

Another positive sign for the industry is the domestic rig utilization rate. Most officials predict a rise of between 8 and 10 pct in the 1983 average of 2,230.

"The current economic recovery, the improved outlook for crude oil price stability, the normally cold winter and an improving cash flow situation for the major oil companies all point to a better year for the OCTG suppliers," one industry official predicted.

Other officials point to indications that the domestic oil and gas industries are emerging from the sharp, downward cycle that began early in 1982. But they caution that a full recovery for OCTG suppliers probably won't occur until 1985.

Instead, the second quarter of 1984 will emerge as an harbinger of the transitional path the industry will take for most of 1984. The severe discounting that has affected the industry over the last two years should end. Inventory holes may appear in some product categories since some inventories currently on hand can be used only for limited application or one situated in inconvenient locations.

However, the long-lasting uncertainty about pricing has kept many from building up inventories. If the projected rig count is accurate for 1984, remaining inventories of OCTG will be cleared up by the end of the year. While that fact certainly bodes well for the industry, it is not yet clear whether distributors and drillers will commit to substantial new purchases by June.

MINING EQUIPMENT—Mining equipment manufacturers are still in the doldrums, particularly those who make coal processing machinery. "Our hope," said one, "has always been the sustained use of coal."

Coal usage throughout the country has been modest, even with such a memorable winter. Few homes use coal anymore and under all that snow was an industrial recession. "So we see a 1984 that looks more like 1983 than 1982," he added. Two years ago was the last big year for the coal industry.

What would spur a coal mining equipment upturn, is obviously an increase in the burning of coal. Two fickle large markets exist: air conditioning and the kind of coal that industry, particularly steel, uses. The other markets for coal, in general, are not cyclical. Consumer power consumption, except for air conditioning, is steady. "So what we always hope for is a boom in steel during a hot and humid summer," quips one industry expert.

Nobody ever knows about the weather and, these days, few will predict much about steel either. So coal companies are running lean and so are their suppliers.

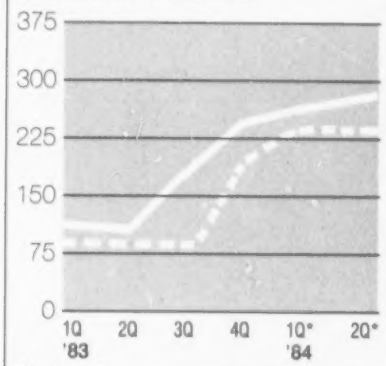
Overseas activity in iron ore has been much more intense than in the old ranges of the Great Lakes for years. Certain U.S. companies have been sharing in the development of large projects overseas for several years. "In fact," said one, "that's been about our only business since the late 70's."

Will domestic iron ore mining ever return to levels of the not-too-distant past? Most experts say no. Iron ore, as almost everyone knows, has only one market. Iron ore mining in the U.S. will return to the tonnage levels dictated by steelmakers. So the real question for the iron mine supplier companies is where is American steel going? The "imported slab trend is a potential disaster for us," said one mining company president.

Discounting that affected the industry over the last two years should end.

Tubular Goods, Shipments

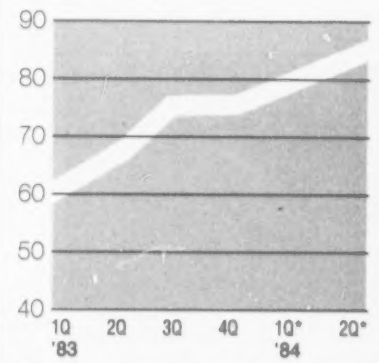
Thousands of Net Tons



Source: AISI
*/A estimate

Mining Equipment, Sales

Millions of Dollars



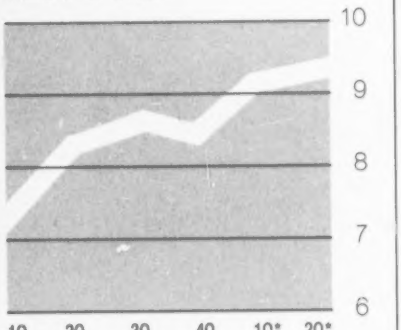
Total U.S. and export figures, based on present dollars. Includes continuous miners, mobile loading machines, shuttle cars and cutting machines.
Source: Mining Equipment Manufacturers
*/A estimate

APPLIANCES, MATERIAL HANDLING

First quarter sales indicate little slackening of last year's record pace.

Appliances, Shipments

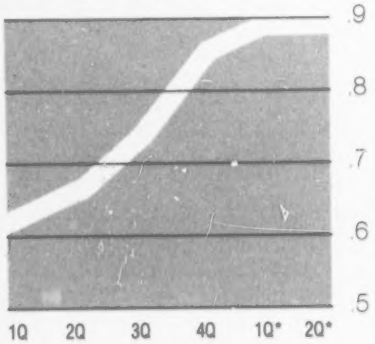
Millions of Units



Source: Association of Home Appliance Manufacturers
*IA estimate

Materials Handling, Shipments

Billions of Dollars



Source: Material Handling Institute
*IA estimate

APPLIANCES—Appliance sales were strong last year and will remain robust though the second quarter and the rest of this year.

In 1983, more than 32 million major household appliances were shipped. The figure, a 21 pct increase over 1982 totals, represents the greatest annual percentage increase for the appliance industry. This rapid rate of growth is not expected to hold up through 1984, but first quarter sales indicate little slackening of last year's record pace.

Early first quarter figures show unit sales continuing to grow at a rate near 20 pct. Industry observers see sales for the entire year increasing from 4 pct to 12 pct. Even with only a 4 pct pickup, 1984 unit shipments will be the second highest in industry history. Last year was the best year for the appliance industry since 1979.

Industry success in 1984 will be due to two major factors: a continuing desire for new houses and a growing need to replace worn-out appliances. Since about 20 pct of all major appliances sold go into new homes, the growing number of housing starts in January and February bodes well for the industry. Construction of new homes and apartments rose 11.2 pct in February, an unexpectedly high figure in view of continuing rise in interest rates.

While such jumps in new construction will not last, some industry observers are predicting that housing starts will reach 1.8 million in 1984, up from 1.7 million in 1983.

With the lifting of the recession, consumers are beginning to open up their wallets to buy new products to replace their aging appliances. At present, many appliances are nearing their 15th birthday. Demand is also rising for computerized appliances.

Despite the sales gains, industry officials fear mushrooming government deficits could drive up interest rates of mortgages and halt housing starts.

MATERIAL HANDLING—According to the numbers, the recession in the material handling industry has been over for a while. The numbers for the first quarter of this year confirm that. They're up and up quite a bit.

"We expect a good 1984," said one industrial truck maker. "If certain events do come to pass as well in 1984, we expect a very good year."

Those certain events, he explained, are matters of the Federal deficit and inflation. "If both are perceived as controlled, I think we're entering a period better than a boom."

Many material handling companies expect the first half's numbers to be 15 pct above the first half of 1983. A few expect 1984 to be a banner year, particularly if capital spending picks up where the consumer leaves off.

And, except for industrial trucks, the industry has so far existed in the domestic market immune from the foreign competition that has decimated other manufacturers. According to industry sources, that will remain the case indefinitely "because so much of this business is custom."

"We seeing a normal recovery," added one company president. "We are planning for a year of increasing business and don't expect the downturn that some economists are predicting later this year."

Others in the industry aren't so optimistic, but few are truly pessimistic about the rest of 1984.

"Our business," said one large systems maker, "is not nearly as cyclical as other industries because our market includes all of warehousing from steel to semiconductors.

What worries the industry is what worries the rest of the business community. Is the recovery headed for a stall and another slump? Most material handling equipment makers come down on the optimistic side as the second quarter's numbers start to show up better than the first.

CASTINGS, FORGINGS

CASTINGS—Despite a hesitation in December, foundries entered 1984 on a much stronger note.

This is true of ferrous castings shipments, which have risen more than 25 pct over the year ago period in the first quarter and should add a little more in the second quarter. On a short-term forecast, that means the first quarter is up 6 pct over the last quarter of 1983. It should advance another 6 pct or more in the second quarter.

Aluminum castings are doing well, and aluminum foundries could ship 20 pct more castings by weight in 1984 than were shipped in 1983. Some have shot up as much as 40 pct over the year ago period.

Copper-based castings are having a fairly good first quarter and should advance again in the second quarter.

Ferrous castings, nevertheless, are showing improvement across the board. Not only gray and ductile iron castings, but steel castings are now moving well as the capital goods markets warm up.

The problem that plagues a lot of castings producers is the difficulty of planning for the second quarter. Buyers are unwilling to order ahead, even in the nonferrous castings where metal supplies have been tighter.

Buyers have enjoyed a lot of excess foundry capacity during 1983, which allowed for fast delivery, even though some suppliers to the auto and appliance industry were up to full capacity.

With a reviving farm equipment and construction machinery market, two big outlets for gray and ductile castings, there's going to be an increase in delivery pressure from these buyers even though they've been unwilling to make long-term commitments. Another area of market growth: the energy-and-drilling market is showing more life, and producing some new castings demand.

There's also still a net return problem in foundries, faced with higher raw material costs and some decline in available scrap supply.

FORGINGS—The forging industry, which has been having more than its share of reverses in the past three years, finally got some good news.

January 1984 orders for the custom impression die forging producers surpassed $227 million, the highest monthly total since August 1981. In the nadir of the recesssion in 1982, some of the quarterly order figures were not much higher than the January 1984 monthly total.

Anchored by a record-breaking January, first quarter orders and shipments are substantially higher than fourth quarter 1983 totals. The second quarter will be even better, building upon first quarter gains.

The recent pickup in orders has been the result of a number of small factors and one major factor—the healthy automotive and truck industry.

"Car and truck orders are doing nicely," said an industry official. "Some shops are operating flat out, something we have not seen in a while."

As for the smaller factors: There is some evidence of recovery in the oil field. The past several months have seen some increases in oil drilling, which means a need for forgings.

The construction equipment industry is also on the rebound. The industry, which declined substantially in 1983, expects its sales volume in actual dollars will rise about 10 pct in 1984.

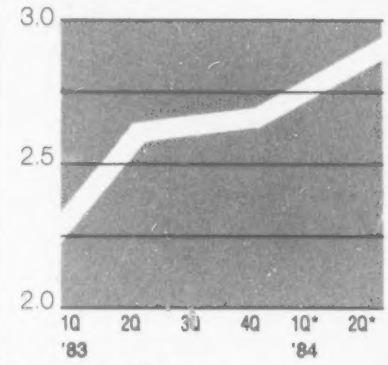
Aerospace industries, the biggest purchasers of forgings, are showing some life. However, much of this activity is military business. The financial plight of many airlines will continue to be reflected in the declining orders for large transport aircraft in 1984.

For the longer term, however, the forging industry is cheering a recent order by American Airlines for 67 MD-80 aircraft for delivery from 1985 through 1987. This order will probably spark orders from other airlines seeking to remain competitive with American.

Ferrous castings are showing improvement across the board.

Ferrous Castings, Shipments

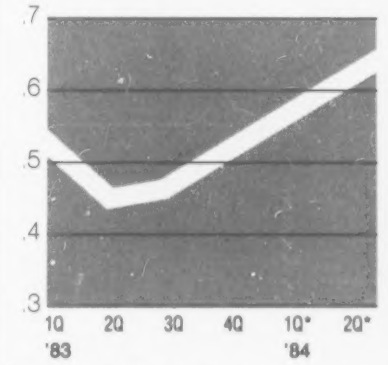
Millions of Tons



Source: Dept. of Commerce, Iron Castings Society
*IA estimate

Impression Die Forgings, Shipments

Billions of Dollars



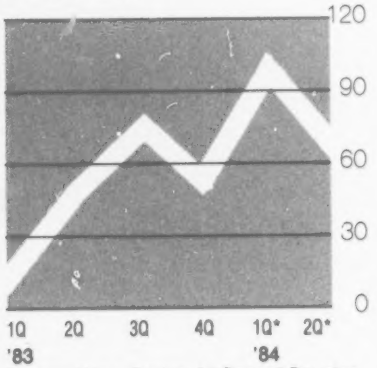
Source: Forging Industry Assn.
*IA estimate

AIRCRAFT, ENGINES & TURBINES

. . . a sustained period of airline profitability is required for . . . new orders.

Commercial Airplane, Orders

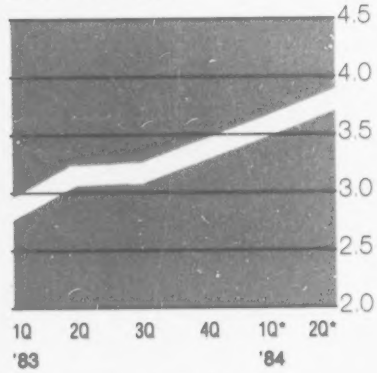
No. of Planes



Source: Airbus, Boeing, McDonnell-Douglas
*IA estimate

Engines and Turbines, Shipments

Billions of Dollars



Source: Dept. of Commerce
*IA estimate

AIRCRAFT—Buoyed by the largest domestic commercial airline order in recent memory and improving passenger traffic that could result in renewed profitability for major airline companies, major airframe manufacturers are beginning to talk optimistically about improved profits in 1984.

Economy recovery for the manufacturers has generally lagged behind other economic sectors and the major companies have been relying on military orders to help the long-depressed profit picture. But a major sign that this tide could be changing occurred in late February when American Airlines announced a $1.3 billion order for 67 new fuel efficient airplanes from McDonnell Douglas Corp. The airline citing the need to replace older, less efficient planes on short and medium routes, took options on 100 more of the craft.

Analysts and industry officials long have predicted that major domestic and foreign carriers were prepared to purchase new generation aircraft. But the American announcement suggested the economic recovery now has reached the point where the carriers are positioned to begin making those long-delayed purchases. There are expectations that other airline companies—or a consortium of firms—could announce similar purchases in the second and third quarters. This could place the airframe manufacturers in their strongest position since 1981.

But the short-term outlook for the second quarter remains guarded. There is no guarantee that orders actually will materialize by June. One industry official says that further domestic airline passenger growth is expected for 1984. The general economic recovery coupled with the resumption of traffic growth and improvements in airline profits should lead to new orders.

However, the same official warns that a sustained period of airline growth and profitability is required for substantial increases in new orders.

ENGINES & TURBINES—The slow but noticeable improvement that began in this industry during the latter half of 1983 is continuing.

But few industry officials are predicting any dramatic changes in shipments of engines and turbines for the second quarter.

Most agree manufacturers are seeing a steady upturn and that the low point has been reached.

But a sustained recovery is still a few months away as the industry lags behind other, more responsive segments of the economy.

The market for diesel engines appears to be the industry brightest hope at this time. A spokesman for one major manufacturer said that market has begun to show some new life and should see more gains in orders if the recovery stays on track.

The depressed state of the domestic nuclear energy industry; the drop in consumer demand for power which translates into a lack of new orders in the power plant market; and a continuing over capacity all are factors cited as a serious drag on this wide-ranging industry.

"We're slowly eating into the backlog of earlier industry orders, but we still have a way to go," explained one official.

He expects the year as a whole to be better than the previous year, but does not foresee any dramatic changes in production on a quarterly basis.

Most officials also cite the long lag time between the general economic recovery and its impact on major customers, like utility companies, to which many of the engines and turbines eventually are shipped.

Despite the conservatism, this industry appears to be more optimistic than it was at this time a year ago. The ongoing recovery is being viewed as a strong positive factor, although its full influence probably won't be felt for at least another few quarters.

WELDING, HEAT TREATING

WELDING—As a whole, the welding industry is showing signs of coming out of the doldrums, a position it has occupied for about two years now. The large fabricators are still suffering, but business in general is definitely picking up. There are some signs, however, that plate fabrication could come back to life in the second quarter.

One barometer of business is the welding supply index compiled by the National Welding Supply Assn. (NWSA), Philadelphia. The index for the fourth quarter 1983 reached 449 which surpassed the index figure of 382 for the fourth quarter 1983. The first quarter 1984 should come out at 500 and is expected to move on up to 550 in the second quarter.

One good reason that the American welding industry is as strong as it is can be traced to the fact that foreign competition is not much of a factor, at least in the standard products.

"January was a big month for business activity," said one welding distributor from the Southeast who is a member of the NWSA. "Inquiries and purchases are definitely on the upswing. Barring an unexpected turn for the worse, we anticipate the first quarter purchases to register bigger advances than those which were recorded in the final quarters of 1983."

A distributor from the Northeast states: "The improvement in customer optimism has accelerated over the past several months and we are seeing increases that cut across every segment of our business."

Distributors in the Midwest also are optimistic. One remarks that the resurgence of industrial activity represents a turnaround that will sustain a healthy rate of growth. "I look for a good year," he noted.

"Inquiries for capital equipment have definitely picked up," said another distributor in the East, "and interest rates will be a key factor influencing growth here."

HEAT TREATING—Heat treating, despite the strength it began to show in latter 1983, could be the industry to watch in 1984. The current forecasts from heat treaters are conservative. They expect a 10 pct to 15 pct gain in the first quarter over the closing period of 1983. In the second quarter, they don't expect much further upswing.

There's nothing wrong with the further increases against last year, which are higher than 20 pct on the basis of data available so far. But some companies are having to push their short term forecasts upward. Asked why, they're apt to say that the buying is on such short delivery that it's not producing much of a growth in backlog despite the continuing gains in volume.

Usually, the second quarter runs at about the pace set in the first quarter. It would be no surprise if it held at the same quarterly rate, or about $100 million in billings. But there are hints there may be more heat in the second quarter than those backlogs indicate.

Heat treaters appear to be doing some hedging against the possibility of a slug business in the second quarter. Orders for industrial heating equipment began to turn in the third quarter 1983 and have been gaining ever since. On the current projection, they could advance another 15 pct in the first quarter when final figures are in for the period. That's about double the average gain of the past five years. Equipment orders also are outpacing heat treating billings, when you compare them with the year ago period and were already doing that in the fourth quarter.

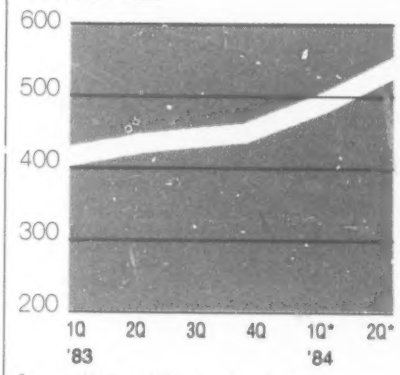
So heat treat planners have to cope with an old problem: That orders always lag on the uptake during an economic recovery, and then show up in a big slug that taxes capacity about three to six months later.

For heat treaters in 1984: An encouraging year is shaping up and perhaps a lot better than many have been willing to admit.

'. . . we are seeing increases that cut across every segment of our business.'

Welding, Shipments

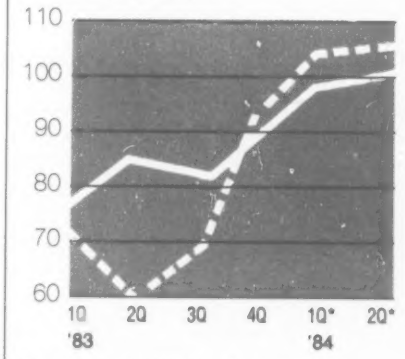
Index: 100 = $200 million in distributor sales



Source: National Welding Supply Assn.
*IA estimate

Heat Treatment

Millions of Dollars



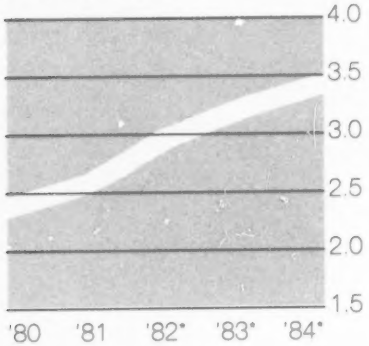
Source: Industrial Heating Equipment Assn., Metal Treating Institute
*IA estimate

Sales of Commercial Heat Treaters
Heat Processing Equipment Orders

SCREW MACHINE PRODUCTS, FASTENERS

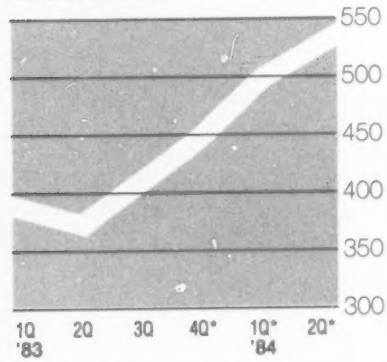
The recovery of the automotive industry . . . bodes well for the screw machine products industry.

Screw Machine Products, Shipments
Billions of Dollars



Source: Dept. of Commerce
*IA estimate

Fasteners, Sales
Millions of Dollars



Source: Industrial Fasteners Institute
*IA estimate

SCREW MACHINE PRODUCTS—Recovery for the screw machine products industry began in the last half of 1983 and has carried into 1984. Preliminary figures indicate a strong spurt in screw machine product sales through the first quarter of 1984.

The increased business should continue into the second quarter. During 1983, discounting inflation, industry shipments grew 4 pct. For 1984, experts are predicting a 8.5 pct increase in shipments. However, that number could be low, if the high sales volumes of the first quarter persist.

The same factors that buoyed the the screw machine product industry in 1983 will continue to support the industry in 1984. Since about one-third of all industry shipments go the automobile-related businesses, the recovery of the automotive industry in 1983 and its predicted continuing growth in 1984 bodes well for the screw machine products industry this year. In 1983, nearly 20 pct more automobiles were produced in the U.S. than in 1982. In 1984, that growth curve should flatten out to an strong 12 pct.

Screw machine product sales to the appliance industry were another bright spot in 1983 and should continue to be strong through 1984, although the 20 pct growth in that industry in 1983 will taper off to a 5 pct to 12 pct increase for 1984. As plants begin to spend more money on machine tools and other machinery in 1984, and as the construction and farm equipment industries begin to revive, screw machine product sales should further improve.

Not all markets for screw machine products are improving, however. The aircraft industry, for example, will remain stagnant through much of 1984.

The major concern by the screw machine products industry is the threat of high interest rates. Solid growth in 1984 is predicated on the fact that interest rates show little upward movement.

FASTENERS—The turnaround in the mechanical fastener industry is obvious enough. Business is up 12 pct or more in almost all types of nuts and bolts. "It's really surprising how strong this recovery is," said one manufacturer.

Much of the industry's increased activity is clearly due to the boom in Detroit and in appliances. But, if this recovery does turn out to be traditional, after the consumer is done, capital goods will fall right behind. "That's what everyone hopes," adds one specials maker. What others fear is another matter. Right now it's flat out for a lot of fastener plants.

While the first quarter may be up 12 pct or more from the first quarter of 1983, the second quarter of this year may be significantly better. Some industry sources expect the total for the first half to be extremely good, even terrific. "The auto business is the big good news for us," said one.

'Our business is better today than it has been in years," said another industry executive. "We expect it to stay that way for at least the next three months."

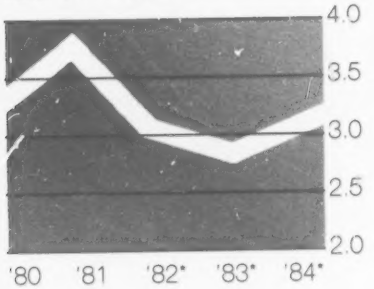
Meanwhile, the import cloud hangs over the industry like a permanent shroud. Much of the standards end of the business, in fact most, has been lost to Pacific Basin economies over the past decade. And, while the present upturn has brought better times to many companies in the industry here, there is little hope that foreign product will not continue to erode U.S. companies' domestic market share. That "little hope" has to do with quality, reports one industry expert. "There is some question in my mind," he said, "about how long the foreigners can keep the business they captured here, both in terms of industry and the consumer, due to their generally lower quality product."

Further hope comes from new labeling requirements on foreign products, making it difficult to pass off imported fasteners as domestic.

BEARINGS, STAMPINGS

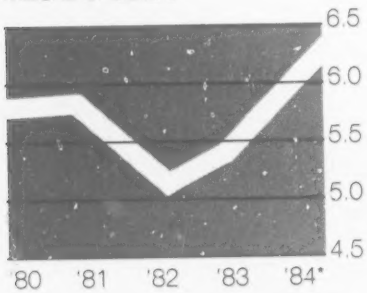
The bearing industry serves a number of markets which are slow to respond. . . .

Ball and Roller Bearings Shipments
Billions of Dollars



Source: Dept. of Commerce
*IA estimate

Stampings, Shipments
Millions of Dollars



Based on the average of a control group whose shipments total more than $500 million annually
Source: American Metal Stamping Assn.
*IA estimate

BEARINGS—While 1983 was a tale of woe for the ball and roller bearing industry, industry experts expect a turnaround in 1984. Preliminary first quarter reports indicate sales are up from the year earlier levels.

In 1983, bearing industry shipments declined despite the recovery of automobile production and sales, the industry's largest market (about 30 pct of total bearing sales).

However, even an expanding auto industry was not enough to bring 1983 bearing sales into the black. Declines in major markets such as oil field equipment, machine tools, aircraft, railroad and farm and construction equipment crippled bearing sales for a second straight year.

This year will be another story. The bearing industry serves a number of markets which are slow to respond to recovery efforts. Some of these are showing signs of life.

The final quarter of 1983 and the first quarter of 1984 witnessed a number of rejuvenations. The construction industry, for example, after a bad first half, picked up in the fourth quarter. That growth is continuing through the first quarter of 1984. Some industry observers believe that the construction industry will see 5 pct real growth in shipments this year compared to an 8.7 pct decline in 1983.

Judging from first quarter figures, farm equipment also is beginning its modest recovery after two bad years. That industry is expected to achieve 5 pct real growth in 1984. Machine tool and machinery sales are reviving, too.

All is not rosy for the bearing industry, however. Aircraft production remains depressed and bearing imports continue to cut into sales efforts of U.S. manufacturers.

Second quarter sales should build on the advances made in the last months of 1983 and the first quarter of 1984. Spring growth will be steady but not spectacular.

STAMPINGS—In talking with stamping industry officials about their prognoses for the second quarter, one producer was almost tempted to ask, "Hey, where's the beef?"

Indeed, although they share everyone's concern over the Federal deficit's impact on interest rates and constricted money supply, stampers' "beefs" seemed rather rare.

One Midwest stamper summed it up this way: "Things are great. Our schedules are much better and after three years of having our ears knocked off, we're just sittin' back and paying off old bills."

Because of the cyclical nature of the industry, he said he couldn't forecast the length of this euphoria. Nevertheless, he expects market demand to remain at this level through June.

Consumer sales are mainly responsible for this headiness, as car sales continue on a roll and February's housing starts rose 20 pct above the January level to their highest point in four or five years.

The industry is also riding the crest of the computer and office equipment sales, but stampers expressed concern for farm equipment sales.

As one put it," All I read about are farm foreclosures."

Shipments of contract metal stampings hit an all-time high in January, up 3 pct from December 1983 and 39 pct above the January 1983 level. Orders booked in January were 1 pct ahead of the December 1983 range and 27 pct above the January 1983 figure.

Meanwhile, the industry backlog inched up to new heights in the first quarter of 1984, reaching 2 pct above the December 1983 point and 25 pct higher than the year-ago figure.

Said another industry spokesman, "Another optimistic factor is the strength of the backlog, as indicated by expected dates of shipment. Delivery pressures are definitely increasing. It's been a long time since the outlook has

GEARS, VALVES

GEARS—The current economic rebound, one gearmaker predicted, "won't be a zinger—just a slow, steady climb."

Last year, was a year that gear makers painfully endured. Orders were low and there wasn't much action in the marketplace. Conditions in the early months of this year seem to be improving. As one source put it, the first quarter of this year was about 15 pct better than the last quarter of 1983. And, he predicted, the second quarter will be up 10 pct over the first quarter.

According to an American Gear Manufacturers Assn. (AGMA) report, its bookings index ran 12 pct higher in January 1984 than in the previous month and 46 pct higher than January a year ago.

Lead times are short and probably will remain so the next few months.

"There still is not much project work going on," lamented a Midwestern gear

Gear markets, including paper/pulp and cement are active. Other industries, such as steel and transportation are either in the doldrums or static.

"Most of our customers are caught in a cash crunch," one explained.

One industry member foresees a pickup in sales of gears to the aluminum industry and a possible rebound in the offshore services market.

Some gear manufacturers are cashing in on automotive and construction predictions of a 20 pct gain in 1984.

One company, Cummins Engine Co. reported that higher demand for heavy-duty trucks prompted it to boost its production of diesel engines an extra 15 pct in the first quarter of this year.

One issue that has a number of gear makers worried is, President Reagan's recent willingness to pare the defense budget by $40 billion. This development could take some wind out of the gear industry's sales in 1984.

Summing up the outlook into the second half, one spokesman put it: "Sure, it's trickling down to us, but we're talking about a pool, not a lake."

VALVES—"We couldn't go much lower," sighed a Midwest valve manufacturer, relieved that the economy's new momentum has finally reached his industry.

Traditionally, because the valve business lags the general economy by nine to 12 months, last year's pickup is has finally had its impact.

'We're catching up, we're getting synchronized. I expect our second quarter to be better than the first, the third better than the second and the fourth best of all," said one valvemaker. He believes the industry sales will rise between 4 and 8 pct this year.

For 1984, industry shipments of valves and pipe fittings are expected to rise about 6 pct in constant dollars, lower than the projected 8.5 pct increase in fabricated metal products, but higher than the 5.2 pct increase predicted for the economy's GNP.

End-user demand for control valves and actuators is particularly heavy from chemical process industries and power generating plants. This demand will continue to push valve sales. Residential construction also has boosted valve component sales.

There's little doing at nuclear power facilities but, as one spokesman put it, "there's positive movement in offshore drilling." He forecasts a bright, long-term outlook after record lease applications in 1983, although he wouldn't go so far as to term this a "boom" market.

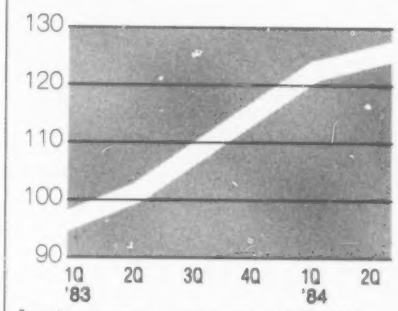
Meanwhile, industry inventories are down and adjusted and lead times, are holding at first quarter levels.

A recent report from the Valve Manufacturers Assn. (VMA) indicated that a major 1984 priority is the world market and how to control the results of change, prompted by economic and competitive pressures.

As one valve maker said, "Our markets haven't made us want to jump up and down and dance in the streets, but compared to last year we're in a much more positive position."

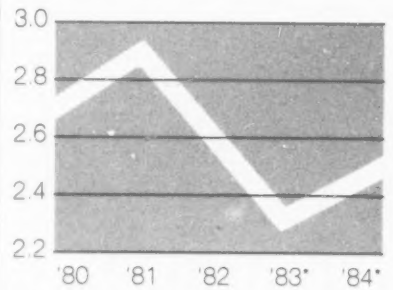
Lead times are short and probably should remain so for the next few months.

Gears, Bookings



Based on average monthly bookings. 1977=100
Source: American Gear Manufacturers Assn.
*IA estimate

Valves, Shipments
Billions of Dollars

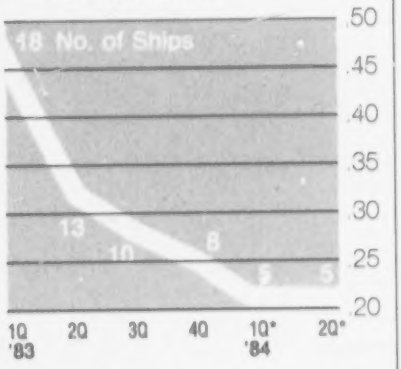


Source: Valve Manufacturers Assn.
*IA estimate

SHIPBUILDING, RAILCARS

. . . employment in some shipyards . . . will never reach the peak it achieved in 1977.

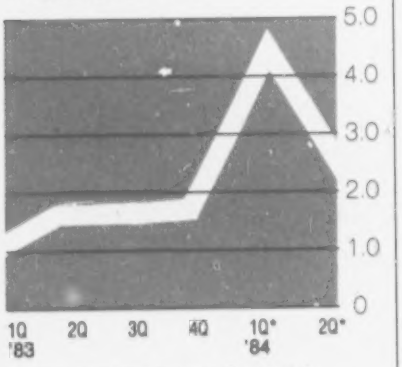
Shipbuilding
Millions of Gross Tons



Commercial ships on order or under construction, 1,000 gross tons or over

Source: Maritime Administration
*IA estimate

Rail Car Orders
Thousands of Units



Source: American Railway Car Institute
*IA estimate

SHIPBUILDING—The good news is that the American shipping lines are buying freighters and tankers. Unfortunately, they are not buying them from American shipyards. All the business is going to Japan, South Korea and Taiwan.

"If it weren't for the U.S. Navy," comments one observer, "we probably wouldn't have any shipyards at all."

Eight commercial ships were under construction in U.S. yards at the end of last year. Now, that production number has been reduced to five.

During the first quarter of 1983, 18 commercial ships were being constructed. By the end of this year, the figure will probably be reduced to one. As far as commercial shipbuilding is concerned, an industry spokesman said that the industry is at its lowest ebb since 1935. Ship repair work is even in a sluggish state.

A few years ago, U.S. shipyards were building 70 offshore rigs per year. The number of rigs under construction is now down to three or four.

Fortunately, not all is gloom and doom because a number of shipyards in this country are working on 111 vessels for the Navy. A year ago, the yards were only building 105 vessels.

The busy shipyards, of course, are the ones with Navy contracts, but even in these yards employment is at its lowest ever. The feeling is that employment in some shipyards will slowly starting building up again toward the end of the third quarter, but will never reach the peak it achieved in 1977.

Several yards are anxiously awaiting news of the contract award for 60 new destroyers from the Navy. The contract is expected to be awarded toward the end of this year.

According to one source, the offshore business has evaporated for the time being, but it's expected to return eventually. When? No one knows.

So, for commercial shipbuilding, the second quarter will be no better than the first quarter—disastrous.

RAILCARS—The builders of railroad cars will never forget those booming times when industry used to field orders for 100,000 cars per year. It's almost impossible to understand how production dropped the way it did, all the way down to 6,000 railroad cars in 1983.

And, when you think of it, a year when orders for cars totaled 40,000 used to be considered as a bad year.

Then along came January 1984. In that one month alone, orders soared to 2,736 units. It was the biggest order month since December 1980 when 4,722 cars were ordered. According to one industrial authority, this recent boom in business has been nicely spread out among the five builders.

As good as it sounds, January is not the beginning of another 100,000-car year, even though the first quarter as a whole (4,600 cars) is a vast improvement over the fourth quarter of 1983, when 1,798 cars were ordered. The next quarter should result in orders for 2,900 cars, but the balance of the year may not keep up the pace.

The problem is a surplus of cars, most of which were delivered prior to deregulation in 1982.

Even the predictions for an improved year in coal shipments will not turn the industry around. There are thousands of coal cars "sitting idle."

In comparison to 1983, this year, quarter for quarter, will be a slight improvement overall.

U.S. carbuilders delivered 415 new cars in January, compared to 440 new cars in January 1983. According to the American Railway Car Institute, 745 were delivered this past December.

The figures are much more optimistic for freight cars on order and undelivered. Cars on order totaled 5,650 on Feb. 1, whereas only 3,271 cars were on order on Jan. 1. □

Reprints available while supply lasts. For single copy, circle No. 85 on Inquiry Card. Additional copies, $1 for articles up to eight pages. Longer articles $2 each. Please include payment with orders of $10 or less. Quantity reprints available. For information write: IRON AGE, Reader Service, Chilton Way, Radnor, PA 19089. Ask for Reprint No. 4492

PRICE & PRODUCTION DATA

(Effective March 26, 1984)

Steel production by districts, thousands of tons (000 omitted)

	Last Week	Two Weeks Ago	Month Ago	Year Ago
North East Coast	251	252	241	198
Buffalo	11	11	11	32
Pittsburgh	296	314	293	209
Youngstown	110	127	126	93
Cleveland	139	135	145	132
Detroit	172	168	151	145
Chicago	561	539	577	464
Cincinnati	106	106	106	102
St. Louis	85	83	85	67
Southern	234	235	221	135
Western	85	82	81	74
U.S. Production	2,050	2,052	2,037	1,651

Source: American Iron & Steel Institute

Lake Superior Ore Prices

51.50% Fe Natural delivered lower Lake ports. Rail transportation, handling and unloading may be charged to the account of the buyer. Coarse ore 80¢ premium.

Pellets (per iron unit natural).....gross-ton 80.50-86.9*
Mesabi, regular-unscreened .....gross-ton $32.53
Mesabi, non-bessemer.....gross-ton $30.03-31.53**

*80.50¢—Pickands Mather as of 1/27/81.
86.9¢—U. S. Steel as of 3/15/82, Cleveland-Cliffs as of 2/26/82, Oglebay Norton as of 3/25/82, and Hanna Mining as of 2/26/82.
**Effective 8/1/83.

STEEL PRODUCTION, COMPOSITE PRICES

(Effective March 26, 1984)

U.S. Steel Production	Last Week	Two Weeks Ago	To Date 1984	To Date 1983
Net tons, in thousands	2,050	2,052	23,001	16,754
Capability Utilization Rate	79.3	79.4	74.2	48.2

Composite Prices	This Week	Week Ago	Month Ago	Year Ago
Finished Steel Base* (¢/lb.—eff. 2/13/84)	26.939	26.939	26.939	26.217
Pig Iron* * (Net ton—2000 lbs.)	$213.00	$213.00	$213.00	$213.00
Scrap No. 1 hvy.* * * (Gross ton—2240 lbs.)	$ 90.83	$ 90.83	$ 94.17	$ 72.83
No. 2 bundles	$ 61.83	$ 62.17	$ 63.17	$ 51.83

Scrap Comparison (Gross Ton)

No. 1 steel, Pittsburgh	$100.50	$100.50	$102.50	$ 77.50
No. 1 steel, Philadelphia	84.50	84.50	89.50	63.50
No. 1 steel, Chicago	87.50	87.50	90.50	77.50
No. 1 bundles, Detroit	95.50	95.50	98.50	76.50
Low Phos., Youngstown	96.50	99.50	100.50	89.50
No. 1 mach'y cast., Pgh	79.50	79.50	79.50	79.50
No. 1 mach'y cast., Phila	100.50	100.50	100.50	98.50
No. 1 mach'y cast., Chi	111.50	111.50	111.50	112.50

*Finished Steel Composite: Weighted index of steel bars, shapes, plates, wire, rails, black pipe, hot and cold rolled sheets and strips.
* *Pig Iron Composite: Based on average prices for basic and foundry pig iron at representative producing points within the U.S.
* * *Steel Scrap Composite: Average of No. 1 hvy. melting steel scrap and No. 2 bundles delivered to consumers at Pittsburgh, Philadelphia and Chicago.

NONFERROUS PRICES

(Effective March 26, 1984) Prices obtained in trade based on representative tonnages per gross ton delivered to consumer unless otherwise stated.

Primary Metal Prices

(cents per lb.)	current price	last price	date of change
Aluminum	81.00	76.00-81.00	9/27/83
Copper (C)	74.00	72.00-74.00	3/20/84
Lead	25.00-28.00	24.00-28.00	3/7/84
Magnesium Ingot	143.00	138.00	1/3/84
Nickel	329.00	350.00	11/25/81
Titanium Sponge	555.00-585.00	555.00	4/29/82
Zinc	53.00	51.00-53.00	3/12/84

ALUMINUM: 99.5%. COPPER (C) = cathode. LEAD: common grade. MAGNESIUM: 99.8% pig, delivered. NICKEL: electro., Port Colborne, Canada. ZINC: high grade.

Antimony, American Laredo, Texas . $2.00
Beryllium-aluminum 5% Be, per lb. contained Be $215.00
Beryllium-copper, per lb. cont. Be $130.00
Beryllium 97% powder 200.....$178.00
Bismuth, ton lots .....$1.65-$1.80
Cadmium, ton lots $1.50
Calcium, ton lots, crowr. $3.50
Chromium, 99.8% $3.75
Cobalt, 99%, cathode $12.50
Gold per troy oz. $387.40
Indium, dollars per troy oz. $2.50
Iridium, dollars per troy oz. $600
Magnesium sticks, 10,000 lbs. $1.97
Mercury, per 76-lb. f.o.b. N.Y. ..$300-$310
Molybdenum, lb. tech. moly oxides, 20 lb. MO can $6.85
Nickel oxide sinter at U.S. points of entry $3.12
Palladium, per troy oz. $140
Platinum, per troy oz. $475
Rhodium, per troy oz. $600.00
Silver ingots, per troy oz. $9.345
Vanadium $6.00
Zirconium sponge.....$12.00-$17.00
(Per lb. unless otherwise noted)

Straits Tin Price

(U.S. cents per lb, EX-SMELTER, based on daily market in Penang in Malaysian dollars per kilo.)

March 19—576.23 March 22—575.44
March 20—575.70 March 23—577.02
March 21—575.70

Scrap Prices
Brass Mill Scrap

(Cents per lb; over 20,000 lbs. add 1¢ per lb)

	Solids	Turning
Copper	68	59
Yellow brass	62½	57
Red brass	64¼	57¾
Comm. bronze	65	58
Mang. bronze	64¾	57
Free cutting rod ends	57	56

Custom Smelters Scrap

(Cents per lb.,.carload lots, del. refinery)

No. 1 copper wire	65
No. 2 copper wire	55
Light copper	46

Ingot Makers Scrap

(Cents per lb., carload lots, del. refinery)

No. 1 copper wire	61
No. 2 copper wire	51
Light copper	42
No. 1 composition	58
No. 1 comp. turnings	56
Hvy. yellow brass solids	39
Hvy. yellow brass turnings	34
Radiators	48

Aluminum

New mixed clips	51	—52
Old sheet	50	—51
Old cast	50	—51
Clean dry borings	50	—51

Dealers' Scrap

(Dealers' buying price f.o.b. New York in cents per pound)

Aluminum

Segregated clippings	45	—47
Mixed L.C. clips	39	—41
Old sheets and cast	37	—38
Borings and turnings	28	—29
Duraluminum clippings	29	—30

Copper and Brass

No. 1 copper wire	53	—54
No. 2 copper wire	44	—45
Light copper	38	—39
Radiators	36	—37
No. 1 composition	45	—46
No. 1 composition turn'gs	42	—43
Cocks and faucets	31	—32
Clean heavy yellow brass	29	—30
Brass Pipe	30	—31
New soft brass clippings	47	—48

Lead

Heavy soft lead	9	—10
Whole batteries	3	— 4
Type metal	15	—16
Electrotype	13	—14

Nickel

Nickel solids	110	—120
Nickel rod ends	110	—120
Nickel sheets, clips	110	—120
Nickel turnings	50	— 60

Zinc

New zinc clippings	18	— 19
Old diecast zinc	14	— 15

EFFECTIVE MAR. 26, 1984

(Effective March 26, 1984) Prices obtained in trade based on representative tonnages per gross ton delivered to consumer unless otherwise stated. Prices are the opinions of *Iron Age* editors and correspondents, based on contacts with dealers, brokers, generators and users in the industry on the effective date listed above.

Ferrous Scrap Prices

Pittsburgh

No. 1 hvy. melting	$100.00 to $101.00
No. 2 hvy. melting	90.00 to 91.00
No. 1 dealer bundles	119.00 to 120.00
No. 1 factory bundles (auto)	125.00 to 126.00
No. 2 bundles	59.00 to 60.00
No. 1 busheling	112.00 to 113.00
Machine shop turn.	16.00 to 17.00
Shoveling turnings	54.00 to 55.00
Cast iron borings	53.00 to 54.00
Low phos. punchings plate	125.00 to 126.00
Heavy turnings	90.00 to 91.00
No. 1 RR hvy. melting	113.00 to 114.00
Rails 2 ft. and under	122.00 to 123.00
Scrap rails, random lgth.	107.00 to 108.00
RR specialties	121.00 to 122.00
No. 1 machinery cast	79.00 to 80.00
Cupola cast	72.00 to 73.00
Heavy breakable cast	30.00 to 31.00
Stainless	
18-8 bundles and solids	590.00 to 600.00
18-8 turnings	490.00 to 500.00

Chicago

No. 1 hvy. melting	$ 87.00 to $ 88.00
No. 2 hvy. melting	81.00 to 82.00
No. 1 dealer bundles	112.00 to 113.00
No. 1 factory bundles (auto)	115.00 to 116.00
No. 2 dealer bundles	84.00 to 85.00
No. 1 busheling	107.00 to 108.00
Shredder scrap	106.00 to 107.00
Machine shop turn.	46.00 to 47.00
Mixed bor. and turn.	47.00 to 48.00
Shoveling turnings	58.00 to 59.00
Cast iron borings	58.00 to 59.00
Low phos. forge crop	122.00 to 123.00
Low phos. punchings plate ¼ in. and heavier	132.00 to 133.00
Low phos. 2 ft. and under	127.00 to 128.00
No. 1 RR hvy. melting	109.00 to 110.00
Scrap rails, random lgth.	99.00 to 100.00
Reroller rails	112.00 to 113.00
Rails, 2 ft. and under	126.00 to 127.00
RR couplers and knuckles	110.00 to 111.00
RR car axles	134.00 to 135.00
No. 1 machinery cast	111.00 to 112.00
Cupola cast	105.00 to 106.00
Stove plate	106.00 to 107.00
Steel car wheels	117.00 to 118.00
Stainless	
18-8 bundles and solids	550.00 to 560.00
18-8 turnings	450.00 to 460.00
430 bundles and solids	135.00 to 140.00
430 turnings	100.00 to 105.00

Philadelphia

No. 1 hvy. melting	$ 83.00 to $ 86.00
No. 2 hvy. melting	73.00 to 76.00
No. 1 dealer bundles	101.00 to 104.00
No. 2 dealer bundles	60.00 to 63.00
No. 1 busheling	101.00 to 104.00
Shredder scrap	95.00 to 98.00
Machine shop turn.	29.00 to 32.00
Mixed bor. and turn.	29.00 to 32.00
Shoveling turnings	47.00 to 50.00
Low phos. 5 ft. and under	97.00 to 100.00
Low phos. 2 ft. punchings	117.00 to 120.00
Electric furnace bundles	116.00 to 119.00
RR specialties	99.00 to 102.00
Rails, 2 ft. and under	115.00 to 118.00
Cupola cast	70.00 to 73.00
Heavy breakable cast	57.00 to 60.00
No. 1 machinery cast	99.00 to 102.00

Detroit

Broker buying prices per gross ton on cars:

No. 1 hvy. melting	$ 86.00 to $ 89.00
No. 2 hvy. melting	85.00 to 88.00
No. 1 dealer bundles	95.00 to 96.00
No. 2 bundles	46.00 to 47.00
No. 1 busheling	94.00 to 95.00
Drop forge flashings	66.00 to 67.00
Machine shop turn.	46.00 to 47.00
Mixed borings and turn.	29.00 to 30.00
Shoveling turnings	47.00 to 48.00
Cast iron borings	49.00 to 50.00
Heavy breakable cast	38.00 to 39.00
Mixed cupola cast	54.00 to 55.00
Automobile cast	77.00 to 78.00
Stainless	
18-8 bundles and solids	460.00 to 470.00
18-8 turnings	360.00 to 370.00
430 bundles and solids	120.00 to 130.00

Youngstown

No. 1 hvy. melting	$ 85.00 to $ 86.00
No. 2 hvy. melting	67.00 to 70.00
No. 1 dealer bundles	100.00 to 103.00
No. 2 dealer bundles	37.00 to 40.00
Machine shop turn.	14.00 to 17.00
Shoveling turnings	19.00 to 22.00
Low phos. plate	96.00 to 98.00
Electric furnace bundles	91.00 to 94.00
Galvanized bundles	86.00 to 89.00

Cleveland

No. 1 hvy. melting	$ 80.00 to $ 83.00
No. 2 hvy. melting	50.00 to 53.00
No. 1 dealer bundles	97.00 to 100.00
No. 1 factory bundles	102.00 to 105.00
No. 2 bundles	30.00 to 33.00
No. 1 busheling	99.00 to 102.00
Machine shop turn.	13.00 to 16.00
Mixed bor. and turn.	13.00 to 16.00
Shoveling turnings	15.00 to 18.00
Cast iron borings	18.00 to 21.00
Cut structural & plates, 2 ft. and under	122.00 to 125.00
Low phos. punchings plate	122.00 to 125.00
Drop forge flashings	62.00 to 65.00
Foundry steel, 2 ft. & under	72.00 to 75.00
No. 1 RR hvy melting	87.00 to 90.00
Rails, 2 ft. and under	127.00 to 130.00
Rails, 18 in. and under	128.00 to 131.00
Steel axle turnings	67.00 to 70.00
Railroad cast	100.00 to 103.00
No. 1 machinery cast	107.00 to 110.00
Cupola cast	63.00 to 66.00
Stove plate	48.00 to 51.00
Stainless	
18-8 bundles	375.00 to 385.00
18-8 turnings	325.00 to 335.00
430 bundles	80.00 to 85.00

Buffalo

Broker buying prices per gross ton on cars:

No. 1 hvy. melting	$ 74.00 to $ 75.00
No. 2 hvy. melting	61.00 to 62.00
No. 1 busheling	89.00 to 90.00
No. 1 dealer bundles	89.00 to 90.00
No. 2 bundles	40.00 to 41.00
Machine shop turn.	15.00 to 16.00
Mixed bor. and turn.	13.00 to 14.00
Shoveling turnings	20.00 to 21.00
Cast iron borings	25.00 to 26.00
Low phos. plate	102.00 to 103.00
Structural and plate, 2 ft. and under	102.00 to 103.00
Rails, 2 ft. and under	97.00 to 98.00
Scrap rails, random lgth.	77.00 to 78.00
No. 1 machinery cast	79.00 to 80.00
No. 1 cupola cast	59.00 to 60.00

St. Louis

No. 1 hvy. melting	$ 82.00 to $ 83.00
No. 2 hvy. melting	72.00 to 73.00
Foundry steel, 2 ft.	71.00 to 72.00
No. 1 dealer bundles	82.00 to 83.00
No. 2 bundles	70.00 to 71.00
Machine shop turn.	22.00 to 23.00
Shoveling turnings	29.00 to 30.00
Cast iron borings	40.00 to 41.00
No. 1 RR hvy. melting	89.00 to 90.00
Rails, random length	87.00 to 88.00
Rails, 18 in. and under	99.00 to 100.00
RR specialties	97.00 to 98.00
Cupola cast	74.00 to 75.00
Heavy breakable cast	53.00 to 54.00
Stove plate	88.00 to 89.00
Cast iron car wheels	57.00 to 58.00
Rerolling rails	94.00 to 95.00
Unstripped motor blocks	61.00 to 62.00

Birmingham

No. 1 heavy melting	$ 77.00 to $ 78.00
No. 2 heavy melting	71.00 to 72.00
No. 1 dealer bundles	82.00 to 83.00
No. 2 bundles	57.00 to 58.00
No. 1 busheling	82.00 to 83.00
Shredder scrap	107.00 to 108.00
Machine shop. turn.	41.00 to 42.00
Shoveling turnings	50.00 to 51.00
Cast iron borings	50.00 to 51.00
Electric furnace bundles	75.00 to 76.00
Elec. furnace, 3 ft. & under	80.00 to 81.00
Structural and plate, 2 ft.	108.00 to 109.00
Structural and plate, 4 ft.	105.00 to 106.00
No. 1 RR hvy. melting	105.00 to 106.00
Scrap rails, random lgth.	96.00 to 98.00
Rails, 18 in. and under	110.00 to 111.00
Angles and splice bars	105.00 to 106.00
No. 1 cupola cast	94.00 to 95.00
Unstripped motor blocks	74.00 to 75.00

Cincinnati

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 71.00 to $ 72.00
No. 2 hvy. melting	85.00 to 86.00
No. 1 dealer bundles	85.00 to 86.00
No. 2 bundles	42.00 to 43.00
Machine shop turn.	12.00 to 13.00
Shoveling turnings	14.00 to 15.00
Cast iron borings	29.00 to 30.00
Low phos. 18 in. and under	103.00 to 104.00
Rails, random length	84.00 to 85.00
Rails, 2 ft. and under	99.00 to 100.00
No. 1 cupola cast	74.00 to 75.00
Heavy breakable cast	38.00 to 39.00
Drop broken cast	90.00 to 91.00

New York

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 49.00 to $ 51.00
No. 2 hvy. melting	41.00 to 43.00
No. 2 dealer bundles	23.00 to 27.00
Mixed bor. and turn.	11.00 to 13.00
Machine shop turn.	6.00 to 7.00
Shoveling turnings	14.00 to 15.00
Clean cast. chem. borings	35.00 to 36.00
No. 1 machinery cast	89.00 to 90.00
Mixed yard cast	50.00 to 51.00
Heavy breakable cast	10.00 to 12.00
Stainless	
18-8 prepared solids	500.00 to 520.00
18-8 turnings	400.00 to 420.00
430 prepared solids	90.00 to 110.00
410 solids	80.00 to 90.00

Boston

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 70.00 to $ 72.00
No. 2 hvy. melting	60.00 to 62.00
No. 1 dealer bundles	75.00 to 77.00
No. 2 bundles	39.00 to 41.00
No. 1 busheling	78.00 to 80.00
Shredder scrap	75.00 to 77.00
Machine shop turn.	14.00 to 16.00
Shoveling turnings	20.00 to 22.00
No. 1 machinery cast	90.00 to 95.00
Mixed cupola cast	48.00 to 50.00
Heavy breakable cast	20.00 to 22.00

San Francisco

No. 1 hvy. melting	$ 48.00 to $ 50.00
No. 2 hvy. melting	39.00 to 41.00
No. 1 dealer bundles	37.00 to 39.00
No. 2 dealer bundles	19.00 to 21.00
Machine shop turn.	6.00 to 8.00
Cast iron borings	6.00 to 8.00
No. 1 cupola cast	83.00 to 85.00

Los Angeles

No. 1 hvy. melting	$ 52.00 to $ 54.00
No. 2 hvy. melting	42.00 to 44.00
No. 1 dealer bundles	41.00 to 43.00
No. 2 dealer bundles	21.00 to 23.00
Machine shop turn.	12.00 to 14.00
Shoveling turnings	10.00 to 12.00
Cast iron borings	6.00 to 8.00
Elec. furnace, 1 ft. and under (foundry)	77.00 to 79.00
No. 1 cupola cast	77.00 to 79.00

Seattle

No. 1 hvy. melting	$ 73.00 to $ 75.00
No. 2 hvy. melting	62.00 to 64.00
No. 2 bundles	44.00 to 46.00
No. 1 cupola cast	98.00 to 100.00
Mixed yard cast	85.00 to 87.00

Hamilton, Ont.

Brokers buying price per net ton on cars:

No. 1 heavy melting	$ 90.00
No. 2 heavy melting cut 2 ft. and under	87.00
No. 1 dealer bundles	87.00
No. 2 bundles	48.00
Mixed steel scrap	59.00
Bush. new fact. prep'd.	85.00
Bush. new fact. unprp'd.	75.00
Machine shop turn.	45.00
Short steel turn.	43.00
Mixed bor. and turn.	30.00
Cast scrap	73.00

Houston

Brokers buying prices per gross ton on cars:

No. 1 hvy. melting	$ 85.00 to $ 86.00
No. 2 hvy. melting	69.00 to 70.00
No. 2 bundles	44.00 to 45.00
Machine shop turn.	20.00 to 21.00
Crushed turnings	45.00 to 46.00
Shredder scrap	85.00 to 86.00
Cut structural plate 2 ft. and under	100.00 to 102.00
Unstripped motor blocks	60.00 to 61.00
Cupola cast	81.00 to 82.00

PRODUCER KEY
With Principal Offices

A4 American Cladmetals Co., Carnegie, Pa.
A7 Armco Inc., Middletown, Ohio
A8 Atlantic Steel Co., Atlanta, Ga.
A11 Atlantic Wire Co., Branford, Conn.

B1 Baron Drawn Steel Corp., Toledo, Ohio
B3 Bethlehem Steel Corp., Bethlehem, Pa.
B4 Blair Strip Steel Co., New Castle, Pa.
B6 Bliss & Laughlin Steel Co., Harvey, Ill.

C1 Calstrip Corp., Los Angeles
C8 CF&I Steel Corp., Pueblo, Colo.
C10 Copperweld Steel Co., Warren, Ohio
C11 Crucible Divisions, Colt Industries, Pittsburgh, Pa.
C15 G. O. Carlson, Inc., Thorndale, Pa.
C16 Connors Steel Co., Birmingham, Ala.
C20 Calumet Steel Div., Chicago Heights, Ill.
C21 Cumberland Steel Co., Cumberland, Md.

D1 Detroit Strip Div., Cyclops Corp.
D2 Driver Wilber B., Co., Newark, N. J.
D3 Driver Harris Co., Harrison, N. J.

E3 Enamel Products & Plating Co., McKeesport, Pa.
E4 Elliot Bros. Steel Co., New Castle, Pa.

F1 Firth Sterling, Inc., McKeesport, Pa.

G2 Granite City Steel Co., Granite City, Ill.
G3 Great Lakes Steel Division, National Steel Corp., Ecorse, Mich.
G4 Greer Steel Co., Dover, O.
G5 Green River Steel Corp., Owensboro, Ky.
G6 Gibraltar Steel Corp., Buffalo, N. Y.
G7 Georgetown Steel Corp., Georgetown, S. C.
G8 Guterl Special Steel Corp.

H1 Hercules Drawn Steel Corp., Livonia, Mich.

I2 Ingersoll Steel Div., New Castle, Ind.
I3 Inland Steel Co., Chicago, Ill.
I4 Interlake Steel Corp., Chicago

J2 Jessop Steel Corp., Washington, Pa.
J3 Jones & Laughlin Steel Corp., Pittsburgh
J4 Joslyn Mfg. & Supply Co., Chicago
J5 Judson Steel Corp., Emeryville, Calif.

K1 Kaiser Steel Corp., Fontana, Calif
K2 Keystone Consolidated Industries, Inc.
K3 Kentucky Electric Steel Co., Ashland, Kentucky
K5 Kemco Div., Foote Mineral Co., Keokuk, Iowa

L2 La Salle Steel Co., Chicago
L3 Lone Star Steel Co., Dallas
L4 Lukens Steel Co., Coatesville, Pa.
L5 Litho-Strip Corp., Chicago

M2 McLouth Steel Products Corp.
M4 Mid States Steel & Wire Co., Crawfordsville, Ind.
M8 Mill Strip Products Div., National Steel Service Center, National Steel Corp.
M9 Moltrup Steel Products Co., Beaver Falls, Pa.
M11 Midwest Steel Div., National Steel Corp., Portage, Ind.

N1 Northeast Precision Steel Co., Boston, Mass.
N4 Northwestern Steel & Wire Co., Sterling, Ill.
N8 Northwest Steel Rolling Mills, Seattle, Wash.
N9 Nelsen Steel & Wire Co., Chicago, Ill.
N10 North Star Steel Co., Saint Paul, Minnesota

O2 Oregon Steel Mills, Portland, Ore.

P2 Phoenix Steel Corp., Claymont, Del.
P8 Pacific States Steel Co., Niles, Cal
P13 Penn Dixie Steel Corp., Kokomo, Ind.
P14 Pacific Tube Co., Los Angeles
P15 Philadelphia Steel and Wire Corp., Phila.

R3 Republic Steel Corp., Cleveland
R4 Ramco Steel Co., Buffalo, N. Y.
R5 Roblin Steel Corp., Inc., North Tonawanda, N. Y.
R6 Rodney Metals, Inc., New Bedford, Mass.
R7 Rome Strip Steel Co., Rome, N. Y.

S1 Sharon Steel Corp., Sharon, Pa.
S7 Stanley Works, New Britain, Conn.
S8 Superior Drawn Steel Co., Monaca, Pa.
S10 Seneca Steel Service, Buffalo, N. Y.
S16 Southern Precision Steel Co., Gulfport, Miss.

T4 Thomas Steel Strip Co., Warren, O.
T5 Timken Company, Steel Division, Canton, O.
T7 Texas Steel Co., Fort Worth, Tex.
T9 Triumph Electro Corp., Chicago, Ill.
T10 Tennessee Forging Steel Corp., Harriman, Tenn.
T11 Teledyne Columbia-Summerill, Carnegie, Pa.

U1 United States Steel Corp., Pittsburgh, Pa.

W3 Weirton Steel Division, National Steel Corp., Weirton, West Va.
W5 Wheeling-Pittsburgh Steel Corp.
W7 Wilson Steel & Wire Co., Chicago
W10 Wyckoff Steel Div., Ampco-Pittsburgh Corp., Pittsburgh, Pa.
W14 Whittaker Steel Strip Div., Detroit, Mich.

STEEL SERVICE CENTER PRICES

Price, Dollars per 100 lb

Prices are based on list prices reported to *Iron Age* by a number of metal service centers deemed representative by *Iron Age* and then weighted based in part on the reports received each month. Prices are not intended to reflect the actual transaction prices obtained by any individual metal service center.

Cities*	Sheets			Strip	Plates	Shapes	Bars		Alloy Bars			
City Delivery Charge*	Hot-Rolled (10 gage)	Cold-Rolled (20 gage)	Galvanized (16 gage)	Hot-Rolled Strip	Plates	Standard Structurals	Hot-Rolled (merchant)	Cold Finished	Hot-Rolled 8620 As Rolled	Hot-Rolled 4140 Annealed	Cold-Drawn 8620 As Rolled	Cold-Drawn 4140 Annealed
Atlanta	24.53	31.04	32.34	31.38	22.52	23.47	18.45	31.36	34.34	50.60	69.58	73.19
Baltimore	25.93	30.44	37.14	40.13	26.41	28.12	21.23	38.10	56.93	64.90	71.71	75.93
Birmingham	22.55	31.52	31.90	31.14	22.81	24.48	18.85	30.94	49.31	58.90	68.10	74.43
Boston	30.49	35.06	39.26	44.29	33.34	30.06	21.57	38.76	47.00	56.74	63.46	65.60
Buffalo	26.00	34.53	39.69	41.00	31.32	27.57	18.89	37.20	40.10	47.82	55.33	60.11
Chicago	28.43	33.62	37.13	37.69	23.82	23.96	17.50	31.99	36.06	40.45	45.47	51.08
Cincinnati	26.66	33.07	35.96	30.18	23.56	23.84	17.39	31.73	36.03	40.33	45.58	50.75
Cleveland	27.52	32.48	35.61	35.12	26.10	25.91	18.19	22.87	36.30	40.98	44.14	50.71
Denver	33.76	39.26	39.92	37.00	32.23	28.47	20.80	45.41	49.83	60.27	68.31	75.60
Detroit	27.48	33.83	36.92	33.00	25.61	27.17	17.46	32.00	36.14	40.44	45.84	54.26
Houston	30.18	34.80	39.22	41.62	28.89	27.66	22.92	42.20	48.22	55.77	61.13	68.08
Kansas City	28.55	34.01	38.32	44.62	25.39	27.53	18.90	34.04	42.11	46.17	52.71	61.93
Los Angeles	27.47	34.10	37.84	42.53	32.64	33.40	28.85	39.81	55.94	63.94	69.61	74.65
Memphis	25.34	33.05	34.52	33.57	25.93	26.17	20.00	34.00	36.78	49.96	59.80	69.44
Milwaukee	28.32	34.20	36.76	31.78	23.76	23.25	16.92	31.29	35.65	41.29	45.12	53.21
New York	28.52	35.30	40.00	44.75	31.81	28.14	20.54	41.14	46.00	51.91	61.12	68.72
Philadelphia	29.01	34.06	39.94	42.10	32.13	28.53	20.11	39.09	46.31	54.81	65.15	70.83
Pittsburgh	31.28	37.37	40.62	31.22	34.34	29.53	20.76	31.80	46.10	53.06	60.27	68.22
Portland	28.96	32.06	38.73	36.93	31.42	34.78	27.87	44.85	49.78	57.74	70.44	....
San Francisco	27.93	31.06	38.28	37.89	33.42	29.52	25.80	40.79	58.52	67.63	74.54	82.70
Seattle	23.94	33.41	35.11	34.23	22.24	27.32	24.89	40.73	53.67	70.51	74.14	80.87
Spokane	21.21	30.42	35.65	36.02	33.36	33.77	21.97	43.01	43.20	47.52	....	58.32
St. Louis	27.64	33.26	35.74	33.69	25.60	23.20	17.86	33.56	38.01	42.74	50.17	53.66
St. Paul	27.15	31.20	34.74	36.69	25.85	24.27	17.70	33.75	36.49	41.49	46.09	52.40

Base Quantities. All HR products may be combined for quantity. Hot-rolled sheet, 10 ga x 36 x 96—120; Cold-rolled sheet, 20 ga x 36 x 120; Galv. sheet—16 ga x 36—120; Hot-rolled strip—¼" x 1"; Plate ¼" x 84/; Shapes—I-Beams 6 x 12.5; Hot-rolled bar—Rounds 46-2^{15}/$_{16}$; Cold finished bar—C 1018—1" rounds; Alloy bar—Hot-rolled 8620—1⅝" round; Cold drawn—1" round; Hot-rolled 4140—1⅝" round; Cold drawn—1" round. Check local supplier for additions or deductions from base.

*Prices at all points include metropolitan delivery charges.

Codes identify Producers listed in the Key on page 80. (Prices quoted are mill base prices in cents per pound unless otherwise noted and do not reflect extras or surcharges.) N.A.—Not available.

Billets, Blooms, Slabs

(Dollars per net ton)

Carbon Rerolling, Midwest	
W5	$366.00
N4	$366.00
West	
C6	$346.00
Carbon Forging, East	
B3(3), C10, U1	$453.00
R3	$453.00
Midwest	
R3, U1, W5	$453.00
S1	$420.00
C10	$453.00
K2	$453.00
W5	$453.00
West	
B3(2)	$463.00
C6	$453.00
South	
A7	$453.00
Alloy, East	
R3, C10	$492.00
B3	$492.00
Midwest	
W8, W5, C10	$492.00
U1	$492.00
R3	$492.00
S1	$459.00
West	
B3	$502.00
C6	$469.00
South	
A7	$492.00

Piling Sheet Steel

(cents per lb)

Midwest	
U1	26.45

Structurals

Carbon, East	
B3(2)	23.90
U1, J3	23.90
Midwest	
A7	24.15
C20	22.90
W8	22.90
I3, T10, U1, N4	23.90
West	
C6	25.10
U1	24.40
B3(2)	21.65
South	
C16, U1	23.90
T10	22.90
A8	Cmp*
High-Strength, Low Alloy, East	
B3(2)	23.90
U1, J3	23.90
Midwest	
N4	23.90
W8	24.15
U1	23.90
I3	23.90
West	
U1, A7	24.40
B3(2)	21.65
South	
U1, C16	23.90
Wide Flange, Carbon, East	
B3	23.90
U1, A7, J3	23.90
Midwest	
U1	23.90
N4	23.90
I3	23.90
West	
U1	24.40
C6	24.15
South	
A7	24.15

Strip

Hot-Rolled, Carbon, Cut Edge—all widths, East	
U1, B3	23.75
J3	22.05
Midwest	
A7, D1	22.05
I4	22.85
J3, D1	22.05
W3	22.05
N4	22.55
W5, S1	23.75
U1, B3	23.75
G2, I3, M2, P3, G3	22.05
West	
B3	26.55
South	
R3	22.05
Cold-Rolled, Carbon Max. 25%, East	
E4	29.75
S10	29.60
P15	24.80
U1	38.30
B4	36.60
Q6	36.175
Midwest	
I4	38.30
W14	32.80
S1, J4	34.05
S1	37.05
High-Strength, Hot-Rolled, Low Alloy, Cut Edge & Mill Edge—all widths, (plus extras)†	
Midwest	
M2, G3, R3, W3, J3, G2, I3	22.05
A7	22.05
S1	23.75
South	
R3	22.05
High-Strength, Cold-Rolled, Low Alloy, Mill Edge	
Midwest	
S1	37.05
Alloy, Hot-Rolled, Midwest (plus extras)*	
S1	24.60
I4	25.20
Alloy, Cold-Rolled, East	
C11, E4, M8	43.35
B4	47.25
P15	32.10
Midwest	
I4	44.30
S1	42.30

Sheets

Hot-Rolled, Carbon (18 Ga & Hvyr), East	
B3	23.75
J3	22.05
U1	23.75
Midwest	
A7, G2, G3, I3, M2, R3, W3	22.05
D1	22.05
J3	22.05
I4	22.45
U1, W5, S1, B3	23.75
West	
U1	24.25
South	
R3	22.05
Cold-Rolled, East, Class I	
B3(2)	28.15
J3	26.15
U1	28.15
Midwest	
I3, G3, R3, M2	26.15
G2, W3, M11	26.15
I4	22.00
J3, A7	26.15
D1	26.15
U1, W5, S1, B3	28.15
West	
U1	28.65
South	
R3	24.65
Galvanized (hot-dipped), East	
B3(2)	30.30
U1	30.30
Midwest	
J3, D1	28.00
I3,	28.00
A7, R3, Y1	28.00
G2, W3, M11	28.00
U1, W5, S1	30.30
West	
U1	30.80
South	
R3	28.00
Enameling, Midwest	
U1, S1	29.65
A7, I3, J3	27.85
Long-Terne, Midwest	
W5	31.65
U1	31.65
R3, A7	29.35

†Actual weight basis

Wire Rod

East	
B3(2)	22.35
U1	22.35
Midwest	
N4	22.35
U1, K2	22.35
West	
A7	22.00
C6	21.45
South	
G7	22.35

Tinplate

Electrolytic Tinplate

Single Reduced (70 lb)	
East	**per base box**
J3	$26.29
U1	27.74
B3	26.32
Midwest	
U1	$27.74
J3	26.29
M11	26.29
W3	26.29
W5	26.29
West	
U1	$28.24
South	
U1	$27.74
Double Reduced (55 lb)**	
Midwest	
M11	$21.49
J3	21.49
U1	22.37
W3	21.49
W5	21.49
West	
U1	$22.87
South	
U1	$22.37

Black Plate

Single Reduced (75 lb)*	
East	
B3	$23.83
Midwest	
J3	$24.01
M11	24.01
I3, W5	24.01
W3	24.01
U1	25.26
West	
U1	$25.26
Double Reduced (55 lb)	
East	
B3	$19.70
Midwest	
M11	$18.93
W5	18.93
J3	18.93
W3	18.93
W5	18.93
U1	19.70
West	
U1	$19.70
South	
U1	$19.70

*70 lb—base weight extra $.05
**50 lb—base weight extra $1.40

Bars

Carbon Steel, Hot-Rolled (Special quality)	
East	
R3, K3	25.80
R5	25.80
B3(3), J3	25.80
U1, C10	25.80
Midwest	
A7, I4	23.95
U1, I3, C20, N4	25.80
R3, T10	25.80
K2	25.80
I3	19.50*
West	
B3	25.80
C6	24.45
South	
A8	20.85
A7	25.80
C16	25.80
Cold-Finished Carbon, East	
A11	22.15
R3	33.75
C21	21.15
J3(4), L2	31.00
C2	23.025
M8, W10, T11, S8	31.00
N1	24.475
R4	33.25
B4	33.25
M1	23.025
B4, C10	31.00
Midwest	
B5, W10, Y1, W8, R3, M9	33.25
J3	31.00
B1	33.45
L2	30.75
N9	31.00
P3	19.85 + CMS
W14	22.20
J3(3)	31.00
J3	31.00
West	
B5	34.90
R3	37.15
South	
B5	32.85
J3	34.00
C16	24.40
J3	31.95
Alloy, Hot-Rolled, East	
B3(2), R5, K3, C10, U1	27.95
R3	27.95
J3	27.95
Midwest	
A7, U1, R3	27.95
I3, C10	27.95
I4	26.10
I3	21.00*
West	
B3	27.95
B5	18.50
C6	26.60
South	
A7	24.85
A8	22.00
Alloy, Cold Drawn, East	
L2	35.20
R3, N1, C2	37.90
M1	28.025
R4	37.10
A11	30.50
J3, W10, L2	34.85
T11, S8	34.85
C10	34.85
J3(2)	34.25
Midwest	
R3, C10	37.35
C2	28.275
J3, W10	34.85
P3	22.75
B1	37.30
N9	34.85
L2	34.65
B5	37.10
J3	36.00
J3	34.85
M9	37.10
West	
R3	40.75
South	
J3	35.85
C16	28.00

Plates

Carbon Steel, East	
B3(2), U1	25.75
L4	25.75
P2	25.75
J3	26.75
Midwest	
B3, R3, S1	25.75
I3	24.25
J3, A7	22.80
U1, I4	25.75
R3	26.75
West	
A7, C6	24.25
U1, B3	25.75
O2	23.00
South	
R3	25.75
A7	25.75
U1	25.75
Alloy, East	
B3, J3	33.55
U1, L4	33.55
P2	33.55
J3	34.55
Midwest	
B3	33.55
G2, G3	33.55
I4, U1	33.55
West	
B3	32.05
O2	31.00
South	
A7	27.55
U1	33.55

Wire

Carbon Steel Wire, East	
B3(2)	27.10
U1	27.70
A11	22.15
Midwest	
U1	27.70
A7, R3	24.60
N4, W7	27.40
K2	24.20
South	
A8	22.85
West	
A7	25.95
C6	24.95

PRODUCER PRICES UP IN FEBRUARY

The economy continues to grow—maybe too fast, some analysts say. There is fear of overheating.

Producer prices, however, rose at only a "moderate" rate in February, according to the Bureau of Labor Statistics (BLS). They give scant indication the economy is being fueled at an unhealthy rate, according to the statistics.

The producer price index for the second month of 1984, showed a 0.4 pct increase compared with 0.6 pct in January, the BLS said.

The January rise was the steepest in 14 months. So even though the rate of increase slowed in February, prices are running at a faster pace. Prices for crude materials other than food and energy rose 0.8 pct in February after declining 3.6 pct in January.

Prices for capital equipment rose 0.5 pct after edging up 0.1 pct in January, the BLS said. Within that category, prices rose for motor trucks, truck trailers and aircraft, among others. Car prices showed no increase while light trucks were up only 0.1 pct. Those increases offset declines for office and store machines, transformers and printing trades machinery.

Without food and energy factored in, industrial prices for February increased about the same as in each of the previous three months, 0.2 pct. The indexes for passenger cars and light vehicles showed large increases after seasonal adjustment.

The index of intermediate products, used in various stages of production, was unchanged in February after seasonal adjustment. That index has inched up 0.1 pct in previous months.

The durable manufacturing materials index advanced 0.5 pct. Higher prices were registered for most nonferrous metals, steel pipes and tubes.

In a related development, industrial production rose 1.2 pct in February compared with January, according to the Federal Reserve Board. It is the second strong increase in two months.

Latest Month Covered: February 1984

Products	Index Reading For Month (1967 = 100)	Pct Change From Previous Month	Pct Change From Year-Ago Month
Metal Cutting Machine Tools	383.9	+ 2.5	+ 1.3
Metal Forming Machine Tools	419.3	0	+ 1.3
Agricultural Machinery & Equip.	331.1	+ 0.1	+ 2.4
Construction Machinery & Equip.	355.9	+ 0.5	+ 1.9
Industrial Process Furnace & Ovens	370.6	+ 0.1	+ 3.8
Industrial Material Handling Equip.	287.2	+ 0.1	+ 0.8
Pumps, Compressors & Allied Equip.	346.3	+ 0.1	− 0.1
Fluid Power Equip. (Dec. 1970 = 100)	254.9	0	+ 1.1
Mechanical Power Transmission Equip.	321.7	0	+ 2.3
Automobiles	221.9	0	+ 2.5
Motor Trucks—Light	280.8	+ 0.1	+ 3.0
Motor Trucks—Heavy	326.9	+ 0.7	+ 3.0
Railroad Equipment	359.2	0	+ 2.5
Fabricated Metal Structural Products	306.9	+ 0.1	+ 1.4
Electric Motors	337.7	+ 0.1	+ 4.5
Valves & Fittings (Dec. 1982 = 100)	100.4	+ 0.2	− 0.4
Ball & Roller Bearings	335.5	0	+ 1.3
Cutting Tools & Accessories	276.9	+ 0.1	+ 1.5
Heating Equipment	248.4	+ 0.4	+ 3.2
Plumbing Fixtures & Brass Fittings	296.9	+ 1.0	+ 4.7
Metal Containers	344.9	+ 0.1	+ 4.2
Miscellaneous Metal Products	290.7	+ 0.3	+ 4.2

Data based on U.S. Labor Dept.'s Producer Price Index